96-191

LOVE CANAL: HEALTH STUDIES AND RELOCATION

JOINT HEARING

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

OF THE

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE U.S. HOUSE OF REPRESENTATIVES

AND THE

SUBCOMMITTEE ON ENVIRONMENT, ENERGY, AND NATURAL RESOURCES

OF THE

COMMITTEE ON GOVERNMENT OPERATIONS

NINETY-SIXTH CONGRESS

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CONTENTS

Testimony of— Page

Barron, Dr. Stephen, Assistant Professor of Neurology, University of Buffalo 41, 47

Davis, Swep, Associate Assistant Administrator for Water and Waste Management, Environmental Protection Agency 17, 41

Gage, Dr. Stephen J., Assistant Administrator for Research and Development, Environmental Protection Agency 17, 41

LaFalce, Hon. John J., a Representative in Congress from the State of New York 4

Miller, Jeffrey G., Assistant Administrator for Enforcement, Environmental Protection Agency 17, 41

Rall, Dr. David P., Director, National Institute of Environmental Health Sciences, Department of Health and Human Services 41

Additional material submitted for the record by—

Health and Human Services, Department of, Chart—Steps in evaluation of potentially hazardous dumps 45

Oversight and Investigations Subcommittee, Committee on Interstate and Foreign Commerce, and Environment, Energy, and Natural Resources Subcommittee, Committee on Government Operations:

Letter dated May 5, 1980, from Dante Picciano, Ph.D., Scientific Director, Biogenics Corp., to Dr. Frode Ulvedal, EPA, re results of the pilot cytogenetic study of the Love Canal residents 22

Memorandum dated May 19, 1980, from Chuck Morgan, EPA Hazardous Waste Enforcement Task Force, to Douglas MacMillan, Acting Director, re Love Canal data base 59

OMB document re resources for long-term health studies by EPA 30

Report of meeting between scientists from HEW and EPA with Dr. Beverly Paigen and New York State Department of Health Scientists 55

LOVE CANAL: HEALTH STUDIES AND RELOCATION

THURSDAY, MAY 22, 1980

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS, COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE, AND SUBCOMMITTEE ON ENVIRONMENT, ENERGY, AND NATURAL RESOURCES, COMMITTEE ON GOVERNMENT OPERATIONS,

Washington, D.C.

The subcommittees met, pursuant to notice, at 10 a.m., in room 2322, Rayburn House Office Building, Hon. Bob Eckhardt, chairman of the Subcommittee on Oversight and Investigations, and Hon. Toby Moffett, chairman of the Subcommittee on Environment, Energy, and Natural Resources presiding.

Mr. ECKHARDT. The Subcommittee on Oversight and Investigations and the Subcommittee on Environment, Energy, and Natural Resources, chaired by Mr. Moffett, will commence hearings this morning.

Today the Subcommittee on Oversight and Investigations is joining with the Government Operations Subcommittee on Environment, Energy, and Natural Resources to examine the actions taken by the Federal Government and the State of New York to relocate temporarily 700 families from the Love Canal and to initiate scientific studies of the health effects on the residents in order to determine whether they can safely return to their homes. We also will explore the implications of this experience for future Government planning and for the hazardous waste legislation presently being considered by the Congress.

The very fact that this is the first time that people located near a hazardous waste site have been temporarily evacuated under the Federal Disaster Relief Act illustrates the seriousness of the Love Canal problem. But it is not necessary here to draw conclusions with respect to fault, the conclusiveness or validity of evidence, or final legal liability in the specific case involved. Rather, we are concerned about the type of case illustrated by this real life situation.

What will happen in a future case where people located near a hazardous waste site must be temporarily evacuated? To what extent will the generator of the waste be held liable after it has purportedly divested itself of responsibility? What authority and responsibility should the Government have in gathering evidence and making studies of a serious public health problem such as exists at Love Canal? What is a reasonable period of time for such response?

Then, respecting all these questions, we wish to explore to what extent existing law and the proposed superfund legislation—H.R.

7020—afford authority and machinery to accomplish the desired ends. Also, we want to examine what options exist under Federal law, as it might be amended by H.R. 7020, to relocate the residents of the Love Canal area. The broad language of H.R. 7020 would appear to cover temporary relocation efforts. However, this should be clarified.

Moreover, it is not clear that H.R. 7020, unlike my bill—H.R. 6931—authorizes the expenditure of funds to conduct health studies at particular sites. Unless the final hazardous waste legislation contains clear authority to relocate residents temporarily and to conduct health studies, it will be seriously deficient.

There are also other questions concerning H.R. 7020 that are illuminated by these late exposures in the Love Canal case. I say this realizing that this case is in litigation, and I wish to treat the situation alleged to exist there more as a hypothetical case.

Nevertheless, we will want to explore just what studies the Government plans to do now and how long it will take to complete these studies. Also, what criteria will be used to determine whether it is safe for the residents to return?

Finally, in this subject area, we want to examine what options exist under Federal law to relocate permanently the residents of the Love Canal if the studies suggest that it would be too dangerous for them to return to their homes.

I shall conclude by stating that it is my view that as long as a generator of hazardous waste can shed his legal responsibility for the proper disposal of his waste by selling his waste to a transporter or site owner, we will have more Love Canals created in the future. A regulatory scheme such as the Resource Conservation and Recovery Act in and of itself will not put an end to these problems. The regulatory scheme of RCRA must be coupled with a legal system that places the responsibility for all personal injuries on the generator in order to create adequate incentives to assure the proper disposal of hazardous waste.

I now yield to my cochairman in these hearings, Mr. Moffett.

Mr. MOFFETT. Thank you, Mr. Chairman.

I want to say on behalf of our Government Operations Subcommittee on Environment, Energy, and Natural Resources that it is a pleasure to be working with you once again. I think it is a good thing to have two subcommittees with jurisdiction over the EPA combining efforts on this matter. There is all too much duplication and overlapping in the Congress. I think we have to do more of this type of thing. I am glad we have been able to do it in the past and we can resume that kind of cooperation here today.

Today's hearings focus on the tragedy which is now forcing over 700 families living near the Love Canal in Niagara Falls, N.Y., to flee their homes. Since 1978, studies have shown that toxic chemicals buried in this neighborhood 30 years or so ago pose a continuing threat to its inhabitants. Reported illness and injuries suffered by the residents have already shown that threat to be very real. Yesterday the Federal Government announced that the health danger was so great that hundreds of people would have to leave their homes, at least temporarily.

Yesterday's announcement capped a week of rapid-fire developments that have left some residents and taxpayers—and I think

many others, including people in the Congress—confused. Last Saturday, May 17, Barbara Blum, Deputy Administrator of the Environmental Protection Agency, unexpectedly announced that an EPA health study showed dangerously high levels of chromosome damage among a small group of Love Canal residents. Although emphasizing that the results were only preliminary, EPA suggested that residents might have to be moved from that area.

That EPA announcement understandably created an atmosphere of hysteria in the Love Canal neighborhood. That resulted in the temporary taking of two hostages by a large group of residents who have been frustrated for 2 years by the Government's failure to solve this problem.

Yesterday, confronted with this volatile situation, Deputy Administrator Blum announced that families in the area faced "significant health risks," in her words, from exposure to the chemicals buried in the neighborhood. EPA declared that the remaining residents should move out at least temporarily, at Federal expense, while further studies are completed. The residents are not to return to their homes until—and I quote again from the Blum statement—"all the completed studies are evaluated and weighed against the risks."

This marks the first time, as you have said, Mr. Chairman, that the Federal Government has undertaken such a relocation program to resolve a hazardous waste problem. Today we have asked EPA and members of the scientific community to tell us exactly what precipitated EPA's unique action and what additional tests and remedial measures should be taken.

Love Canal is not an isolated concern. What has happened to these 700 families could happen to families almost anywhere in this country. The sad fact is that Love Canal is just the first of many such cases we must address.

In fact, in Connecticut there are two hazardous dumpsites in my own district in a town called Southington. Several municipal water wells have been closed because dangerous levels of waste solvent have seeped from a leaking waste disposal lagoon into the ground water. In Bristol, another town in my district, millions of gallons of improperly dumped toxic wastes are destroying the water table threatening dozens of private wells.

I know other members of these two subcommittees and other Members of the House are concerned about similiar sites affecting their own constituents.

For that reason, we want to know today and in the days ahead whether EPA has now taken the proper action with regard to Love Canal residents; whether it has the statutory authority, staff, and funds to conduct the necessary health research concerning other dumpsite victims—and I might add we want to know how the politics of balanced budgets come to bear on this question; and whether EPA has adequate statutory authority to react quickly to crisis situations of this type overall.

I hope that after today's hearings, I and my colleagues, will be able to assure residents in each of our districts that, if an emergency develops near their homes, the Federal Government can and will take swift, sensible action. If these hearings do not provide

68-220 0 - 80 - 2

that assurance, then they must be the starting point, at least, for our efforts to make that assurance possible.

We have for too many years approached this problem of hazardous waste in an ad hoc manner, as the Love Canal case shows. We can no longer afford this approach, whether as victims of waste sites or as taxpayers. A rational, nationwide emergency plan for handling Love Canal type health problems must be developed. The dimensions of the risk to public health from such hazardous waste sites must be established promptly and accurately. In the event of a demonstrated health emergency, residents should be evacuated calmly and assisted in putting their disrupted lives in order. EPA must be given a clear mandate from this Congress and funds to accomplish these tasks.

Surely, we can do no less for innocent citizens who are faced with the irresponsible actions of those who poisoned their land, their homes, their lives, and those possibly of their children.

I want to add to my cochairman's comments and say that I have never been more impressed with the way in which an individual member has focused on a problem in his area and been so persistent and has educated himself to such a great extent as to the nature of that problem than our colleague from New York, Mr. LaFalce.

Those kinds of things are said in this place every day, but I want to emphasize my sincerity in saying it here.

I know he directly confronted in a very positive way the President of the United States earlier this week, which I am sure had an impact on the President's decision and the administration's decision, and I am sure he will continue to keep the administration focusing on this problem.

Mr. Chairman, I want to congratulate Mr. LaFalce in the most sincere possible way for being so attentive to his constituents' concerns in an admittedly very difficult situation.

Mr. ECKHARDT. I am sure all of us on these committees share those views, Chairman Moffett. We are very pleased to have as our first witness Hon. John LaFalce.

When you complete your testimony, we would like to have you sit with us on the panel.

STATEMENT OF HON. JOHN J. LaFALCE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. LAFALCE. Thank you very much, Mr. Chairman.

First of all, I want to thank you for having these hearings and to thank you for your very kind comments, and for inviting me to sit with you. I fully intend to.

I do not have any prepared text, but I do have some observations that I would like to make which I think are relevant to the situation.

I have been living with the problem of the Love Canal from the summer of 1977 when I first became aware that residents surrounding that site were experiencing problems because of chemical substances in their basements, in their backyards, in the atmosphere, et cetera. I went into those basements and backyards and visited them. I am not a scientist. I have little scientific expertise.

However, it was obvious to me that something was grievously wrong.

I then called upon the Environmental Protection Agency and various State agencies to come to the Love Canal to do the type of testing that I thought was necessary to determine whether there was a problem.

Without going over the events from the summer of 1977 until August of 1978, let me simply say that in August 1978 the Commissioner of the New York State Department of Health declared that a health emergency existed. At that time he urged pregnant women and children under 2 to relocate. Sometime subsequent to that, the decision was made by the State of New York to permanently relocate not only those families who had been urged to relocate, but all the families in the area that have now become known as rings 1 and 2 surrounding the Love Canal site.

Subsequent to that, in February of 1979, the New York State Commissioner of Health, now a new Commissioner, also said that the perimeter of the affected zone should be considered expanded and, again, pregnant women and children under 2 should be relocated temporarily. This time, however, permanent relocation was not afforded by the State.

In giving a little bit of the history, I should also go back again to August of 1978. At that time we were able to get the then-Federal Disaster Assistance Administration to come to the scene. After coming to the scene, they rendered their report to the President. The President decided that it should be declared an emergency under the embrace of the Federal Disaster Relief Act and Federal assistance should be made available at least for temporary relocation and for a portion of the remedial construction work.

Additionally, working with Senators Javits and Moynihan, we were able to obtain a $4 million demonstration grant under section 8001 of the Resource Conservation and Recovery Act.

Those are the facts, pretty indisputable. Let me make some observations about the past.

From day one, Mr. Chairman, I have been attempting to get the Federal Government and the State government to realize the significance of the problem there and to conduct themselves in an appropriate, responsible, and responsive manner, and both levels of government have failed. They have not adequately addressed themselves to the health concerns of the people. They have not conducted adequate testing. Right now there still is a question mark about what the true health conditions are at the Love Canal site. The reason for that question, the reason for that uncertainty, is the gross ineptitude of both Federal and State governments to act responsibly.

Countless times I have asked them to come in and do comprehensive testing. We have witnessed inertia, ineptitude, indifference. We have not witnessed cooperation between the Federal Government and the State government. We have witnessed confrontation—confrontation between the Environmental Protection Agency and the New York State Department of Health, confrontation between the White House and the Governor's mansion. All of this, Mr. Chairman, has been at the expense of my people.

There can be no excuse. They should have known better. No matter what State or Federal officials say at this table today, they know that they are guilty of inaction.

I received a phone call Friday afternoon from the White House. That was the first time that I was made aware that the Federal Government had commissioned chromosomal studies.

Mr. Chairman, I have to point out to you and underscore that these studies were not undertaken for the right reasons, nor were they undertaken, we have subsequently found out, in the right way. They should have been undertaken years ago—3 years ago, 2 years ago, 1 year ago.

They were undertaken in January of 1980 because the Department of Justice at the end of December 1979 brought a lawsuit against the Hooker Chemical Co. The Department of Justice said, "We'd better have further testing done." Therefore, in order to gather evidence for a lawsuit, rather than fulfill the high responsibility to protect the health and safety of the citizenry, the Federal Government at long last embarked on a test.

I was also told Friday afternoon that an announcement would be made the next day, and that the announcement most probably would call for the temporary relocation of some 700-plus families. I have been arguing for the relocation of a great number of families for a considerable period of time because of the uncertainty that existed. I have been arguing for testing during that period of time. Therefore, I was pleased that at last the relocation would take place—or at least it appeared most probable that it would.

However, I had a number of questions about the test. I was simply told that 11 out of 36 individuals who were tested displayed severe chromosomal damage. I didn't know exactly what that meant, to be quite candid, but it sure scared the living daylights out of me.

I asked, "Well, in the general population, what could we expect?" I was advised, "Well, it would range—perhaps 1 out of 300 would show this type of damage, perhaps 1 out of 1,000, somewhere in that vicinity."

I thought, my God, 1 out of 3 in contrast to 1 of 300 or 1 out of 1,000. This is even more serious than even I thought.

I will not go into what transpired between that moment on Friday afternoon when I first was apprised of the situation and Saturday's press announcement both in Niagara Falls and in Washington simultaneously, but I want to go into a little before that phone call to me and then discuss the events from the time of the press conference.

It should have been quite clear, Mr. Chairman, at some point in time between the commissioning of that study and the receipt of the written report what was contained in that report. I cannot believe that there were not a number of phone calls between the Environmental Protection Agency and Biogenics, headed by Dr. Dante Picciano. I cannot believe, therefore, that they waited until after the meeting at the White House Friday morning, when a tentative decision to probably have relocation was made, to come up with the idea, well, perhaps, we had better have this test validated. If that is true, again I would charge gross ineptitude and negligence.

Also, it is important to note that this study was not carried out in a vacuum. They had the close cooperation, according to Dr. Beverly Paigen, of Dr. Beverly Paigen. I saw her on TV—I think it was Tuesday morning—indicate that she had selected in large part the 36 individuals who should be tested by Biogenics. I would suspect there was, therefore, a close working relationship between her and Biogenics.

I would also strongly suspect that the local homeowners and residents were probably working closely with Biogenics. It is regrettable that the New York State Department of Health was not working closely with EPA also. They found out sometime after the press conference, I believe, on Saturday.

At about quarter to 12 Saturday I was also concerned because I received for the first time the press release of EPA. In that press release I read that the 36 individuals were selected from that segment of the population most likely to show damage. This was the first time I learned of that. As a layman, it caused me concern. I assumed that the testing would have been done according to some representative sampling of the total population. I did not know what that meant. However, I was curious as to how one could make extrapolations from that.

I told this to the White House on Friday afternoon strongly, strenuously—that if they were going to announce in such a public way with such a flourish, with such a crisis-loaded atmosphere surrounding it, this study, and that this study might subsequent to validation bring a decision to relocate my people, it was going to cause a state of panic. It was going to cause tremendous anxiety, fear, frustration, despair, despondency, perhaps chaos. This was countered with the statement, "No. We will do this to allay fear, allay concern, allay and prevent panic." I said, "You don't know what you're talking about."

I argued from that point forward that by virtue of the EPA announcement in and of itself, without even considering all that other health data that had been collected by the local residents, by the State, or by EPA, even though neither the State nor EPA had conducted the comprehensive type of testing that they should have to give us conclusive results, clearly that quantum of evidence and the perception of catastrophe that had been created by the announcement warranted an immediate relocation. I am pleased to say that the President did decide to relocate and made that announcement Wednesday. There has been a decision to conduct the comprehensive testing that I have been calling for almost every day from the summer of 1977 on.

However, I don't think that the Federal Government yet has responded adequately. You see, I am advised that the type of testing that really is going to adequately be needed is going to require the relocation of my people for approximately 1 year. Why relocate people for 1 year?

From a humanitarian point of view, you cannot disrupt their lives and have them living with their children in hotels and motels, going to schools far distant, while they are living also in a period of uncertainty regarding their own lives.

From an economic point of view, Mr. Chairman, to keep an individual and his wife and his children in a hotel or motel room is

going to be costing about $100 a day. That is not taking into consideration their food that will have to be paid for. That is not taking into consideration the additional transportation costs to get the children to school, et cetera.

From an economic point of view, from a humanitarian point of view, and from a medical point of view, I think it makes sense to permanently relocate the people because they are in such a state of fear that they will never want to move back there. This fear has been caused both by the announcements of the various governmental agencies and by the inaction of the various governmental agencies and the question mark that remains because of that action.

Therefore, I am calling upon, as I did yesterday, and as Governor Cary did yesterday, the Federal Government to exercise the authority that we think they have under existing law, if they interpret it properly, to give permanent relocation costs to the people who were moved, so that thorough testing can be done over the period of 1 year. Then we can decide what to do at that point in time with the homes and with the neighborhood, in order at that time to adequately deal with the health data conclusions that we reach.

Mr. Chairman, I could go on for hours, but I think I have summarized the highlights of what has taken place. I highlighed my observations. Should you have any questions, I would be very pleased to attempt to answer them.

Mr. ECKHARDT. Mr. LaFalce, if you will permit, we will proceed with Mr. Lent, who was absent a few moments ago, to make an opening statement. Then we will ask the questions. Then you can join us.

Mr. LENT. Thank you very much, Mr. Chairman.

I don't really have a long statement.

I would like to congratulate and commend my colleague from the State of New York, John LaFalce, for his leadership. I certainly sympathize with him and the plight of his constituents in the Love Canal area. I think all of us here in the Congress have somewhat similar problems with different dump sites in our areas, but certainly Congressman LaFalce had the major problem in his area.

I approach today's hearings with mixed emotions. On the one hand, I strongly sympathize with Congressman LaFalce and the residents of the Love Canal who have been the innocent victims of toxic waste dumping, and I applaud the fact that they will be relocated until further more definitive testing is performed.

On the other hand, I am appalled that the EPA would release the results of such a study known to be a preliminary and uncorroborated medical report.

By releasing the chromosome study prepared by Biogenics in the manner it did, EPA may very well have caused totally unnecessary additional anguish and anxiety to the residents of Love Canal. Those people have already suffered tremendously. To needlessly worry them further, in my opinion, borders on irresponsibility.

However, now that the decision has been made to temporarily relocate the additional 700 families in the Love Canal area, I believe it must be done swiftly, with the minimum of inconvenience to the persons affected. Jurisdictional disputes over who pays ought to be put aside in deference to those families plight.

This is a big job to be done which shouldn't be hampered by bureaucractic infighting over who pays or who assists with the move.

In the meantime, I congratulate the two chairmen of these committees for their leadership in bringing these hearings. I believe it is our duty to review EPA's actions regarding Love Canal. It is apparent to me that EPA needs specific guidelines for dealing with other festering abandoned toxic waste dumps. Such problem sites should be handled rapidly, systematically, and equitably. If that is what our hearings today can help achieve, then we will have served the citizens of this country well.

Thank you, Mr. Chairman.

Mr. ECKHARDT. Mr. Gore?

Mr. GORE. Thank you, Mr. Chairman. I will be very brief.

I would like to thank our colleague from New York, Mr. LaFalce, for his leadership in this area.

This is the 15th hearing that the Oversight and Investigations Subcommittee has conducted into this subject. I well remember the very first hearing that any congressional subcommittee held on this subject. I was privileged to chair that at the request of former Congressman John Moss.

The reason we got into it to begin with was because of you, John, who came and talked to me about it and said this is a national problem that has to be opened up. That was in the fall of 1977.

Since then the issue has really been flushed out. Most people now realize what a terrific challenge we are facing in the United States to deal with these hazardous waste sites that are around the country.

I think there has been some misunderstanding about the nature of this study that caused the relocation over the weekend. The impression that has gotten out, and I saw the editorials this morning in the Washington Post and the New York Times, that somehow there is a difference between the standards accepted for a lawsuit and standards used for a health study for other studies—that is simply not the case.

The real problem here is that no study here was done prior to this study. The health study should have been performed, as you said, several years ago when the people were first known to be in jeopardy. The fact that no such study was conducted then really set up the sequence of events that we saw last weekend and this week.

As I understand this study, it was not designed to be a comprehensive study. The author of the study—and I am not a scientist and do not intend to try to defend it—the author of the study, as I understand it, was attempting to conduct a pilot study and laid out clearly at the end of this work what now needs to be done in order to make the results comprehensive.

When the preliminary results of this pilot study became available the Government was then posed with a dilemma: Should these results be safeguarded? Should they be withheld? Or do these results which admittedly came in a pilot study effort cause enough concern to go ahead with the evacuation?

It seems to me that what is needed is to learn from this experience and to set up within EPA the kind of capacity that it needs to respond effectively to other such instances when they occur.

I am going to have some questions for other witnesses about the inadequate capability which now exists within EPA to conduct such studies.

Let me just ask briefly this question: Do you agree with my assessment on how this came about—that it was a lack of a previous study that set up the sequence of events, and then the Government was faced with a genuine dilemma when it got the alarming results of this pilot study?

Mr. LAFALCE. In large part, I would concur. I do think, though, that having received the study and having the data from the study over the phone prior to receiving the written report, they could have acted more responsibly. They could have had the validation of the study almost instantaneously. They could have had it in a day by flying a team down to Houston a week ago or 2 weeks or so ago or more. They did not have to wait.

Also, the formation of the peer review group engendered quite a bit of controversy. I think that could have been foreseen. It is my understanding that one of the individuals who was selected to be on the peer review group had been a constant prior critic of the head of Biogenics. I think that was the primary reason that the head of Biogenics refused to let this peer review team come in to view the slides, et cetera.

Also, it should have been quite obvious to the Environmental Protection Agency that if the local individuals and the local scientists were working on a regular basis with Biogenics, there was no way they were going to be able to—I hate to use the words "sit on it" because I am sure that was not the intent—attempt delay making it public for a very long period of time. The methodologies that were used surely prevented this.

Also, we have been focusing on the Environmental Protection Agency, but there are other Federal agencies that have a role. The Department of Health, Education, and Welfare has been equally inadequate in responding to this problem. The problem with the Federal Government is that the Federal Government has not defined what its role should be when confronted with environmental crises of this nature.

Second, they have not defined what the respective role of each individual agency should be.

Third, they have not defined what the role of the constituent departments, bureaus, centers, or institutes within their agency should be in this total problem. The result is we have had an unbelievable amount of fragmentation, confusion, inability to make decisions, one agency not knowing what the other agency is doing, individuals in one agency not knowing what individuals within that same agency are doing, et cetera.

We talk about EPA and their resources, but we do have a National Institute of Environmental Health Sciences. If it is not the responsibility of the National Institute of Environmental Health Sciences to take charge, to conduct tests, in a situation such as this, in God's name whose responsibility is it?

I cannot begin to tell you the number of times that I had conversations with the commissioner of the New York State Department of Health, with the Chairman of the National Institute of Environmental Health Sciences who is going to be testifying here shortly,

with the EPA, with the White House—trying to get them to define the roles of Federal and State government and then define the respective roles of the component agencies within those levels of government. To this day we do not have that definition. We do not have that type of comprehensive plan.

Let me make another point. If we have an oil spill, we have a national contingency plan under section 311 to deal with oil spills. We do not have an effective section 311 for hazardous waste because it took almost 6 or 7 years to get it finally promulgated, effectively legally. It was not until the fall, I think November or December, of 1979 that section 311 became effective for hazardous waste.

We also need under that section a national contingency plan. My assistant is telling me that has just been put in place. We have not had it up until this point in time.

Mr. GORE. I want to thank you for your response. I was concerned that we not miss the forest for the trees in looking at the study.

Mr. LAFALCE. Let's not forget about section 504 also, which gives authorization for the Federal Government to give an immediate response to an environmental emergency. This Congress, by explicit recorded vote, has refused to fund section 504. I know because I offered the amendment on the floor of the House that so many of you strongly supported. The administration has refused to back it. That is one of the primary reasons that we were not able to obtain its passage on the floor of the House. I hope when I offer that amendment again this year that it will have the administration's backing.

Mr. ECKHARDT. Mr. Dannemeyer?

Mr. DANNEMEYER. Mr. Chairman, I hope some of the things that will come out in the hearing today will shed some light on such questions as: Does the Federal Government have a cause of action under existing law to recover for funds it may advance to remove these families, if it is appropriate to remove them—and it appears that it is.

I suspect, but I do not know and I want to find out, that the reason that State government and local government of New York and the Federal Government agencies have not acted before now to remove these families is a very simple one. They are all playing the game around the table when it comes time to pick up and pay the check. The question is who is going to pay the tab. If we appropriate the money and tell some administrator, "Here is the money. Go take the families away from that hazard," I suspect they will be removed rather quickly. I suspect the reason they have not done it before now is they don't know who is going to pay for it. We are in the business and we are supposed to be able to solve that.

If it is the Federal Government's responsibility to front the money to move the people out, and perhaps it is, then we as taxpayers or trustees of taxpayers money should make sure that the Federal Government has a cause of action to recover from the responsible party the money that we advanced to remove these families for the sake of their own health.

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For instance, has a civil action been filed on behalf of these people in some State court of the State of New York? Do you know?

Mr. LAFALCE. Yes, countless civil actions have been filed individually by the affected residents against diverse parties, such as Hooker Chemical Co., the city of Niagara Falls, the school board, et cetera. Also, the Federal Government has brought an action and the State government has brought an action.

Mr. Dannemeyer, you point out something that bears underscoring. You said that individuals are afraid of who is going to pick up the tab. State and Federal governments know that we should have had comprehensive testing in the past. Indeed, I do not know I can fault the hearts of the Environmental Protection Agency because I think they wanted to. I do not think they could get the money to do the type of testing because OMB would not give them the money.

Also, the State of New York knew there should have been some comprehensive testing because the State of New York last year made a request of EPA to fund cytogenetic testing. That was denied—or at least turned back.

Mr. DANNEMEYER. If the civil action has been filed, another remedy that the Federal Government should have, if Federal dollars are going to go in to alleviate this problem that someone else created, is the ability to intervene in the action to recover taxpayers' money that goes into the removal of this problem. I would hope, Mr. Chairman, we would address those concerns in the hearing today.

Mr. ECKHARDT. I thank the gentleman.

I think we ought to look at the new act that is going into effect if we should ultimately pass it—the one that came out of our committee—which does deal with the question of third party liability with respect to cleanup. However, it does provide defenses—(A) an act of God or an act of war, (B) negligence on the part of the Government of the United States, (C) an act or omission of the third party if the defendant establishes that he exercised due care with respect to the hazardous waste concerned, taking into consideration the characteristics of such hazardous waste, and (D) any combination of the foregoing.

I think, as the gentleman has pointed out, we should be sure that these defenses would not permit the escape from liability of the person who caused the damage in the first place. We need to look into the question of whether or not, at least in the future—and I am really not talking about changing the rules of the game retrospectively—at least in the future if an act of this type occurs, whether there should be absolute liability rather than the question of defenses on the bases set out here. These are matters we should be concerned with.

I thank the gentleman for his contribution.

Mr. GORE. Would the gentleman yield on that point?

Mr. ECKHARDT. I yield to the gentleman from Tennessee.

Mr. GORE. As the chairman knows, I had an amendment in the House Interstate and Foreign Commerce Committee to remove the third party defense from the bill which will shortly be pending in the full House. I think it is important to underscore this point.

The legislation which we now have pending would actually put a new defense at the disposal of chemical companies who are defending themselves against actions by the Federal Government. It is not inconceivable that this new defense, if it remains in the legislation, would actually have a bearing on the pending litigation concerning Love Canal. Therefore, I would hope the amendment I intend to offer again on the floor of the House will pass so that our response to the tragedy at Love Canal does not include an effort to give a new defense to chemical companies against actions to force them to clean up these hazardous waste sites.

I thank the chairman for yielding.

Mr. ECKHARDT. Mr. Maguire?

Mr. MAGUIRE. Thank you, Mr. Chairman.

Mr. LaFalce, I appreciate your being here with us today and your statement.

I wonder if you would comment on something that happened in the closing hours of the consideration by the Commerce Committee of the superfund proposal, the proposal that allows at least some minimal moneys to be allocated for situations like Love Canal. At the very last minute, as a result of pressures exerted on the committee from industry, a provision was stricken from the bill which would have provided individuals access to the Federal courts to recover for health and other costs incurred as a result of exposure. I wonder if you would tell us how you feel about that and whether you might be interested in joining some of us in attempting to remedy that particular defect in the bill.

Mr. LAFALCE. Mr. Maguire, I could not agree with you more. As a matter of fact, not only in this Congress but in the prior Congress, in approximately August 1978, I introduced legislation called the Federal Toxic Tort Act. It permitted injured individuals to have redress not only in State courts, but also in Federal courts. More than that, though, I also created a Federal cause of action which I think is imperative, given the present state of the law regarding toxic torts.

I may not be a health expert but I did practice trial law. I have conducted exhaustive hearings on the issue of product liability, as I think most of you realize.

Although product liability is evolving and it has evolved considerably, the law of toxic torts is relatively new. The individuals who have been injured, and often grievously, because of their exposure to toxic substances, face considerable and sometimes insuperable hurdles in their efforts to obtain redress. What are those hurdles? First, the statute of limitations and, second, the issue of causation.

Take the State of New York, for example. In May 1979 in the State of New York the *Thornton* case was decided. That case involved the injection of a chemical substance into the arm of a patient with a needle.

That individual was injured, but the injury did not take place at the time of the injection of the needle. The injury did not become apparent when the chemical substance began to have its impact. To the injured person that injury occurred when he became aware of it. Now in my judgment when he became aware of it or when he should have become aware of it, as of that point in time the statute of limitations should have begun to run.

Instead, the court of appeals interpreted New York State law—and this is the case in a number of jurisdictions throughout the United States of America—to say that the statute of limitations did not begin to accrue when he should have become aware of the injury, it didn't accrue when the chemicals began working upon the individual; the statute of limitations began to accrue as of the time that the needle was injected into his arm. Therefore, he is barred from the courtroom.

If I could continue on the issue of causation, we again have insuperable difficulties very often in establishing, according to traditional proof requirements, the causation, although the reason of mankind would call for you to conclude that if something walks like a duck, talks like a duck, acts like a duck, speaks like a duck, then it is a duck. Not so in a court of law.

I would also point out that, insofar as the superfund is concerned, this Congress has to make a judgment whether it wants to concern itself exclusively with dirt and mud and inanimate objects or whether it also wants to concern itself with people. If we want to concern ourselves with people, we have got to amend the superfund that came out of the Interstate Foreign Commerce Committee.

Mr. MAGUIRE. It strikes me the gentleman is making a very important point if I may continue my remarks.

Mr. ECKHARDT. We do have four other witnesses. The Chair is going to have to enforce a 5-minute rule.

Mr. MAGUIRE. I promise not to ask another question, Mr. Chairman.

Mr. LAFALCE. I don't know if it is the questions or the answers?

Mr. ECKHARDT. The gentleman may proceed for another minute.

Mr. MAGUIRE. Thank you.

I think the gentleman is making a very important point which is right at the crux of this problem. That is, the Government will respond to a disaster immediately if it is a volcanic eruption or a hurricane or a flood, but when you have people who are going to suffer nerve damage, cancer, birth defects at some later time and you cannot tell precisely when it will be, what is the Government's response? We have a tangle of bureaucratic inertia, inadequate funding, and legal complexities that has prevented the Government from acting.

I would assume from the newspaper reports that I received this morning that, whatever the inadequacies of the test data may be, and they will have to be further examined, those people at Love Canal are just delighted to get out. Pandemonium erupted, they burst into tears, they hugged each other, and thanked God for deliverance. That is because finally the Government is doing what it should have done long ago.

Mr. LAFALCE. Mr. Maguire, a week from Saturday I invite you to a dance that we are going to have, the Love Canal Homeowners Association dance. There is going to be a lot of celebrating.

Mr. ECKHARDT. Mr. Deckard?

Mr. DECKARD. Thank you, Mr. Chairman.

Mr. LaFalce, your concern in this tragedy is quite apparent and commendable. As some of my colleagues have commented, this is one of the most obvious examples of what is a growing national

problem. It is a problem that will have to be addressed by the Federal Government, which must require and enforce greater corporate responsibility in the disposal of toxic wastes in order to try to prevent further Love Canals.

I think there is a responsibility that lies not only with the Federal Government, but with State and local governments as well—and of course, with corporations, too.

In reading over the press release that was issued by Hooker Chemical recently, Hooker said that it does not own and has not owned the Love Canal site for 27 years and has had no control over the site since that date. The deed for the transfer warned that the site contained chemical wastes. The site cover was disturbed by the school board, the city of Niagara Falls, and the State of New York.

To the best of your knowledge, is that a factual presentation of the history of the site?

Mr. LAFALCE. Those are the allegations that Hooker is making. You will have to call them to answer questions regarding their allegations.

Mr. DECKARD. With respect to that point I wonder what responsibility, if any, have these other agencies of government assumed? Has the school board, the city, or the State of New York assumed any responsibility or taken any action at all?

Mr. LAFALCE. The State of New York has spent approximately $40 million thus far in attempting to redress the problems of the people at the Love Canal.

Mr. DECKARD. Thank you very much. That is all, Mr. Chairman.

Mr. ECKHARDT. Mr. Walgren?

Mr. WALGREN. Just briefly, how was that $40 million spent? Can we itemize it quickly?

Mr. LAFALCE. In a number of different ways. I do not have it all in front of me. This was the estimate I got over the phone the other day from Governor Carey. I also believe he put that in his telegram to the White House requesting the President to invoke the Federal Disaster Assistance Relief Act. I also believe he put that in his press release yesterday, commenting on the President's triggering of the Federal Disaster Assistance Relief Act.

Again, I would prefer you get the specific breakdown from the State of New York itself.

Mr. WALGREN. I have one other question. I came in on the middle of this, and I am sorry.

Why were the studies not done earlier? Could you give a very brief summary?

Mr. LAFALCE. Ineptitude, indifference, conflict between various levels of government, lack of a desire to pick up the tab for the costs, perhaps a fear of what the tests would bring. There were many reasons, as I pointed out earlier, Mr. Walgren, all totally inexcusable, all indefensible.

Mr. WALGREN. Thank you, Mr. Chairman.

Mr. DANNEMEYER. Mr. Chairman, I would like to make an observation.

The State of New York has spent $40 million alone—is that right?

Mr. LAFALCE. That is what Governor Carey said in his telegram. That is what he said in his press release, approximately.

Mr. DANNEMEYER. If we had divided the $40 million among the 700 families, that comes to $57,143 per family. I don't know what the cost of housing is in the State of New York currently, but perhaps they could come close to making a downpayment on a house with that money. It would go a long way in solving the problem.

Mr. LAFALCE. Mr. Dannemeyer, I cannot give you a blow-by-blow account, but there was considerable remedial construction work that was conducted subsequent to August 1978, just as one example. I think that remedial construction work was upwards of $10 million. We still do not know the adequacy. It was never conceived as a permanent resolution of the problem. It was only conceived as an interim step, pending further remedial construction work.

We could go on and on and on.

Mr. ECKHARDT. Let's not go too far.

Mr. Fithian?

Mr. FITHIAN. Thank you, Mr. Chairman.

I want to thank our colleague, Mr. LaFalce, for sharing his obviously very strong feelings.

My concern, Mr. Chairman, is that Love Canal represents the tip of the iceberg in the whole problem of dealing with disposal of toxic substances in this country. I suspect this is not the unique situation in terms of the overview of what we are going to run into in the next 10, 15, or 20 years.

My final point is—and this is not a question—it seems to me it is absolutely essential that if we are to prevent illegal, unlawful, concealed dumping, all the problems that we see down the way, then we are going to have to expedite the ability of State and Federal Government in retrieving funds from the companies which have knowingly handled wastes and toxic substances disposal in that fashion.

Thank you.

Mr. ECKHARDT. Thank you.

Mr. LaFalce, if you will join us, we will proceed with the witnesses.

Mr. LAFALCE. Thank you very much, Mr. Chairman.

Mr. ECKHARDT. Now we have a panel of EPA members. I must say that because of the shortness of the notice and the emergency of the situation, also understanding that EPA was heavily involved with this question in the past several days, I understand you gentlemen do not have prepared statements but are available to answer questions.

It is the custom of this committee to swear in the witnesses.

Do you swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Dr. GAGE. I do.

Mr. DAVIS. I do.

Mr. MILLER. I do.

Mr. ECKHARDT. If you would like briefly to make introductory statements, the committee would hear you at this time or, if you would prefer merely to respond to questions, we will follow that course.

TESTIMONY OF JEFFREY G. MILLER, ASSISTANT ADMINISTRATOR FOR ENFORCEMENT, ENVIRONMENTAL PROTECTION AGENCY; DR. STEPHEN J. GAGE, ASSISTANT ADMINISTRATOR FOR RESEARCH AND DEVELOPMENT; AND SWEP DAVIS, ASSOCIATE ASSISTANT ADMINISTRATOR FOR WATER AND WASTE MANAGEMENT

Mr. MILLER. Mr. Chairman, I would like to introduce Mr. Swep Davis, who is the Associate Assistant Administrator for Water and Waste Management, who is the Agency's lead on superfund.

I do not believe we have any statement that we would like to make, but we would be prepared to respond to questions.

Mr. ECKHARDT. There have been questions raised here that I would like to have you respond to also.

If the study done for the Justice Department was not a scientifically valid study—and I do not want to characterize it at all one way or another—if it was not, why did EPA release it last week and trigger something close to or beyond panic that took place in the Love Canal area?

Mr. MILLER. The condition on which the samples were taken from the individuals who participated in the study was that we would inform them of the results. At the time we received the study it also apparently was in the hands of other people, and the results of it began to leak out. We thought it was only fair to sit down with each of the individuals who had participated and to inform them of the results and try to put it in whatever perspective that we could.

We realized that once that was done it would immediately be a news event. We knew that a flurry would result, but we really did not think we had any choice. Had we tried to withhold it until we had validation work done, I think we would have been charged with covering up.

Mr. ECKHARDT. I understand that your decision to move these residents was not altogether based on that study but was based upon a composite of information, some of which we have had before this subcommittee—for instance, the studies of Dr. Paigen, some of the studies conducted by the State of New York, and other sources.

Is that correct?

Mr. MILLER. That is correct.

Mr. ECKHARDT. It appears as if EPA has no more information now really, other than the study than it had some time ago. When we were first looking into this question, we had Dr. Paigen here and we found some conflicting testimony or conflicting judgment between Dr. Paigen and some of the authorities of the State of New York. At least we had enough questions raised 8 months ago to have indicated that certain further studies, more definitive, should have been made.

Why were they not ordered at that time? Is it a question of funds? Is it a question of who has the responsibility or what?

Mr. MILLER. I think both of those are part of the problem. We actually did have not just the chromosomal study, but we had over that weekend results of a neurological study which added to the weight of what evidence we had.

Dr. GADE. We also filed a major court case, as you are very familiar with, Mr. Chairman, against Hooker Chemical Co. to reclaim the cost of remedial action and to pay for whatever health and environmental studies needed to be done to insure the long-term safe health of the people there in the Love Canal area. Mr. Miller can give you more details on that case. I am sure it is quite familiar.

That was the major way by which additional resources were going to be obtained in order to insure the long-term viability since some of the diseases that were alleged to be associated with the exposures of the toxic chemicals in the Love Canal area have very long latency periods, such as cancer, requiring 20, 30, or 40 years to develop. It is not only an acute problem, a near-term problem, but also long-term problems. We wanted to make sure that remedial action for the long term would provide an adequate level of protection for all those individuals.

Mr. ECKHARDT. I do not want to overly belabor the facts that have occurred in the past, whether there have been mistakes or not mistakes, whether or not Love Canal is the legal responsibility of Hooker, though certainly a good deal of the testimony before us in the past has indicated that it very likely is. But I want to look at this question more in terms of an example that must be dealt with in the future.

Let us assume that a Love Canal situation—and let us assume that it has, as a hypothetical, the worst aspects of Love Canal—that is, it includes chromosomal damage, it includes irresponsible dealing with waste, et cetera. I am setting that out hypothetically. I do not mean to make a conclusion. This is a matter that is going to go before the courts.

However, assuming such a case comes up, I am concerned about the question of whether the existing provisions of RCRA, the existing authorizations or appropriations or planned appropriations, will take care of the problem which we may have in the future. If I may spell that out briefly, I would like to at this time.

There is some authority apparently for studies done by the Government. I do not know how much appropriation there is for such studies. There are provisions in the bill that just came out of the Interstate and Foreign Commerce Committee that call for studies in connection with the contingency plan, but I am not altogether sure whether we address in that legislation out of the Commerce Committee the kind of thing we are talking about here—that is, site-specific studies of this nature.

You are familiar with the bill, I assume. What is your view on that? Do you think the provisions for studies are adequately dealt with in the legislation that is now before the Congress?

Mr. DAVIS. My response is based upon a print of the committee bill as it was being discussed. I do not have the copy that has been reported out of the committee. That language, I believe, has remained intact.

My understanding of it is that at best it is vague on that point. I believe it is easily open to the interpretation that could not be used—the funds under that bill could not be used for medical studies. One might stretch the interpretation to cover medical studies, but we might also be accused of overreaching in that case.

Mr. ECKHARDT. That is the emergency response authority in section 3041; is that right?

Mr. DAVIS. That is correct.

Mr. ECKHARDT. It provides that the Administrator:

> May take such emergency response actions as he determines should be taken immediately to prevent, minimize, or mitigate any harm to the public health or the environment which is associated with such release or threatened release.

That is the language you are referring to?

Mr. DAVIS. That is part of it. My interpretation is that it is very open and vague. It does not explicitly state nor imply necessarily that health studies would be taken.

Mr. ECKHARDT. In the bill that was introduced, H.R. 6931, we had provided in section 3021(B)(1)(e), "Actions to investigate the health and environmental effects resulting from such contamination." We also specifically referred to the temporary relocation of residents who may be adversely affected by such contamination.

Would such language take care of the problems that you are concerned with here?

Mr. DAVIS. I do not have that language in front of me, nor have I reviewed it recently. I believe that it would.

Mr. ECKHARDT. Suppose, without objection, we leave the record open so that you may look at that and perhaps make recommendations with respect to language in the bill.

[The following statement was received for the record:]

> Under section 3042(a)(1) of H.R. 7020, the national hazardous waste response plan would include, "Methods for discovering and investigating hazardous waste sites and establishing their danger to public health and the environment." I believe that medical studies could be included as a means of establishing the danger to public health posed by a hazardous waste site. There is nothing in the legislative history prepared to date that would preclude this interpretation.

Mr. ECKHARDT. There is one other thing. I shall be brief here because I have really over occupied my time.

That is the related question here of whether or not the language provides for temporary relocation of residents. Frankly, I think it does. I think that the so-called Florio bill is probably as good as the direct language I read to you because I believe the section I read you that permits an emergency response be taken immediately to prevent, minimize, or mitigate any harm to public health or the environment which is associated with such release or threatened release would cover relocation. Do you not agree with that?

Mr. DAVIS. Yes, Mr. Chairman. I would like to clarify that my response earlier was in regard to medical studies.

Mr. ECKHARDT. I understand that. However, with respect to relocation the language seems quite adequate to me.

Mr. DAVIS. I think so, especially with regard to temporary relocation.

Mr. ECKHARDT. Indeed, I believe it may be better to deal with it broadly rather than referring specifically to relocation because you might have other alternatives denied. The language seemed very desirable there.

Mr. MILLER. You might have such language as: "including but not limited to."

Mr. ECKHARDT. Suppose we leave the record open at this time, without objection, so that you might make recommendations with respect to that matter, too.

[The following statement was received for the record:]

The language of section 3041(a)(1)(A) of H.R. 7020—emergency response authority—seems adequate to allow temporary relocation of residents. I recommend that it not be changed.

Mr. MOFFETT. I think that really is important—that we know where you stand as we go through this legislative process on this very important legislation. We need to have a very clear picture from you as to what you think will be relevant and effective in this kind of situation.

Let me quickly go over some of the things we know about this study.

First of all, Dr. Gage, you have been involved in monitoring EPA research; is that correct?

Dr. GAGE. Yes, for about 3½ years.

Mr. MOFFETT. Isn't it true that the Justice Department requested a chromosome study that was discussed by EPA at last Saturday's press conference?

Dr. GAGE. Yes.

Mr. MOFFETT. The study was begun in January of 1980?

Dr. GAGE. I think roughly in that time. It started the latter part of December, as I understand.

Mr. MOFFETT. It was in fact a pilot project to see if chromosome change could be detected among Love Canal residents; is that right?

Dr. GAGE. Yes.

Mr. MOFFETT. I think we have established now that it did not constitute a scientific controlled study; is that correct?

Dr. GAGE. Not by any means. It was a self-selection process where people volunteered.

Mr. MOFFETT. No control group was used.

Dr. GAGE. That is right.

Mr. MOFFETT. Would it be possible to say that, even if a significant number of individuals in the survey showed chromosome problems, the remaining 700 residents or so were in danger? It would be impossible to say that, wouldn't it?

Dr. GAGE. It is my judgment that it would be impossible to say that because the people who were selected for the study had met 1 of 3 criteria, as Dr. Picciano pointed out in his report.

First, they lived in one of the wet areas. Second, they had their homes analyzed and found to contain toxic gases. Three, the individuals had had some disease situation such as reproductive effects, spontaneous abortions, or birth defects in the history of the family.

Mr. MOFFETT. And then there was a letter, was there not, from this Dr. Picciano, the scientist heading up the study, to Dr. Ulvedal?

Mr. Chairman, without objection, I would like that letter introduced into the record.

Mr. ECKHARDT. Without objection, it will be admitted.

Mr. LAFALCE. Reserving the right to object.

Mr. MOFFETT. A point of order. Does the gentleman have any right?

Mr. ECKHARDT. I do not think the gentleman has a right to object.

Mr. MOFFETT. I would be happy to yield to the gentleman who raises the question about this.

Mr. LAFALCE. Could it be the entire letter rather than just portions?

Mr. MOFFETT. Yes, I have asked that the letter be included.

Dr. GAGE. During the press conference last Saturday one small paragraph was deleted which contains reference to a specific individual.

Mr. MOFFETT. I know that. I will say to the gentleman from New York, if you do have objections as we go along, I am not in any way attempting to preclude your objections.

Mr. LAFALCE. I just wanted to make sure you got the whole story.

Mr. ECKHARDT. Without objection, the entire letter will be put into the record.

[The letter referred to follows:]

BIOGENICS CORPORATION
5751 SAVOY LANE
HOUSTON, TEXAS 77036
(713) 974-5199

May 5, 1980

Dr. Frode Ulvedal
Health Effects Division, RD-683
Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Dear Dr. Ulvedal:

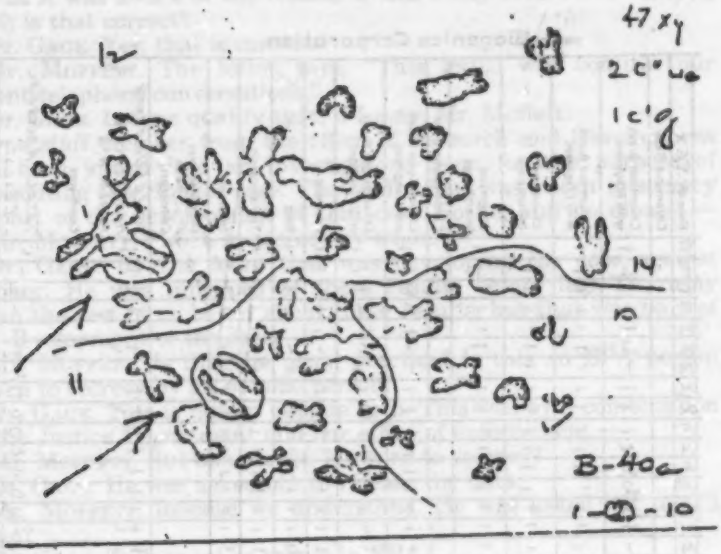
This letter will confirm our recent telephone conversations in reference to the results of the pilot cytogenetic study of the Love Canal residents. As you know, 36 individuals were examined by conventional cytogenetic techniques, and 200 metaphase spreads were analyzed per individual. Two points are of significance. First, eight of the 36 individuals had supernumerary acrocentric fragments of rather large size (Attachments 1 and 2). The range of such affected individuals in the normal population is estimated to be between one in 100 and one in 1000. Second, four individuals had ring chromosomes. One such affected individual also had a supernumerary acrocentric fragment. The occurrence of individuals with ring chromosomes in the normal population is relatively rare. Both of these results are believed to be significant deviation from normal, but in the absence of a control population, prudence must be exerted in the interpretation of such results.

As we have discussed with you in previous meetings, we strongly recommend the cytogenetic analysis of a larger population of Love Canal residents along with a number of unexposed individuals (controls) before significance can be placed upon the results. We would need to study a minimum of 50 unexposed individuals, 50 or more individuals with low exposure, 50 or more individuals with intermediate exposure, and 50 or more individuals with high exposure. We should be able to best detect induced cytogenetic aberrations in these individuals with a mid-summer study. These experimental considerations will allow for the possible generation of a "dose-response" relationship.

We will be glad to discuss our findings and/or recommendations with you at your convenience.

Sincerely yours,

Dante Picciano, Ph.D.
Scientific Director



picture of chromosomes

READEX FICHE

Biogenics Corporation

Animal	SEX	Chromatid Gaps	Chromatid Break with Fragment	Chromatid Break w/o Fragment	Chromatid Interchange	Chromatid Interchange	Chromosome Gaps	Chromosome Break with Fragment	Chromosome Break w/o Fragment	Deletion	Ring	Translocation	Inversion	Miscellaneous (Describe in Comments)	Supernumerary Acrocentric Fragments	Comments	TOTAL ABERRANT CELLS	TOTAL CELLS
1	M		1	-	-	-		-	-	-	-	-	-		-		0	100
2	F		-	1	-	1		1	-	-	-	-	-		-		2	100
3	F		-	1	-	-		2	1	-	-	-	-		-		4	100
4	F		-	-	-	-		2	1	-	-	-	-		-		1	100
5	M		2	-	-	-		-	-	-	-	-	-		-		0	100
6	M		-	-	-	-		1	6	1	12	-	-		+		6	100
7	M		1	-	-	-		1	-	-	-	-	-		-		2	100
8	M		-	-	-	-		-	-	-	1	-	-		-		0	100
9	M		1	-	-	-		-	3	-	-	-	-		+		3	100
10	F		-	-	-	-		1	-	-	-	-	-		-		0	100
11	F		4	-	-	-		1	-	-	-	-	-		-		1	100
12	F		3	-	-	-		-	-	-	12	-	-		-		4	100
13	F		3	-	-	-		-	-	-	-	-	-		-		3	100
14	F		2	-	-	-		1	-	-	-	-	-		-		3	100
15	M		-	-	-	-		-	1	-	-	-	-		+		1	100
16	M		1	-	-	-		-	-	-	2	-	-		-		3	100
17	F		5	-	-	-		1	3	-	-	-	-		+		6	100
18	F		-	-	-	-		-	2	-	-	-	-		+		2	100
19	F		1	1	-	-		1	-	-	-	-	-		-		0	100
20	M		1	-	-	-		1	-	-	12	-	-		-		3	100
21	M		4	-	-	-		1	-	-	-	-	-		-		3	100
22	F		-	2	-	-		1	1	-	-	-	-		-		3	100
23	M		2	-	-	-		1	1	-	-	-	-		-		3	100
24	F		2	-	-	-		-	-	-	-	-	-		-		2	100
25	F		4	-	-	-		1	1	-	-	-	-		+		4	100
26	F		2	-	-	-		-	-	-	-	-	-		-		2	100
27	M		3	-	-	-		1	4	-	-	-	-		+		5	100
28	M		1	-	-	-		-	-	-	-	-	-		-		1	100
29	M		1	-	-	-		1	2	-	-	-	-		+		4	100
30	M		5	-	-	-		-	-	-	-	-	-		-		0	100
31	F		1	-	-	-		1	-	-	-	-	-		-		2	100
32	M		1	1	-	-		1	-	-	-	-	-		-		3	100
33	M		3	1	-	-		1	-	-	1	-	-		-		6	100
34	M		4	-	-	-		-	-	-	-	-	-		-		4	100
35	M		3	-	-	-		-	-	-	-	-	-		-		3	100
36	F		1	-	-	-		-	-	-	-	-	-		-		0	100

Mr. MOFFETT. That letter of May 5, 1980, seems to indicate that the EPA was aware of the results of this study even before May 5, 1980; is that correct?

Dr. GAGE. Yes, that is correct.

Mr. MOFFETT. The letter says, "This letter will confirm our recent telephone conversations."

Dr. GAGE. Let me qualify that, if I may, Mr. Moffett.

One staff member from the office of Research and Development had been joined into an investigatory team for the purpose of prosecuting the Hooker case. That individual was sworn to secrecy as part of the development of that case. So he, and he alone——

Mr. MOFFETT. Sworn to secrecy by whom?

Dr. GAGE. By the team that was developing the case against Hooker. He was informed of these results before last Thursday when the rest of us heard about these results, but that was part of the development of the case.

Mr. MOFFETT. Is this the usual practice? Is this an EPA person sworn to secrecy by an outside person?

Dr. GAGE. This is not an outside firm. This was by a combination of the Justice Department and our office of enforcement——

Mr. MOFFETT. But one person is sworn to secrecy?

Dr. GAGE. He was asked not to release the data.

Mr. MOFFETT. Release we understand. He was asked not to tell them?

Dr. GAGE. Talk to other people in EPA.

Mr. MOFFETT. Mr. Costle?

Dr. GAGE. No specific mention of any individual.

Mr. MOFFETT. Is it fair to say that EPA had at least 12 days to review these findings before they were released or would you say that you did not have that much time because this information was only in the hands of one person?

Dr. GAGE. I would say we did not have adequate time to review the findings.

Mr. MOFFETT. You waited until you received the final report before beginning your review of the study; is that correct?

Dr. GAGE. Yes. The report was only made available to us last Thursday in written form.

Mr. MOFFETT. Who asked for this review of the study?

Dr. GAGE. The review of the study occurred as soon as the report was made——

Mr. MOFFETT. Who asked for it?

Dr. GAGE. Who asked for the review?

Mr. MOFFETT. Yes.

Dr. GAGE. I did.

Mr. MOFFETT. You asked for it?

Dr. GAGE. Yes; and independently a request was made for review by Dr. Rall of the Department of Health and Human Services and a number of White House staff.

Mr. MOFFETT. After the report was released?

Dr. GAGE. After the report became known to us in the Environmental Protection Agency, which was last Thursday.

Mr. MOFFETT. And the White House you said was asking for a review? How did the White House know about it?

Dr. GAGE. The White House had been told about the presence or the fact that such a report was coming forward.

Mr. MOFFETT. So they were asking for a review.

Dr. GAGE. Yes. I think that was the only responsible thing for all of us to do at that time.

Mr. MOFFETT. That is fine, but what are we to make of the fact then that as high level a person as the Assistant Administrator of the Environmental Protection Agency wants the study to be reviewed, the White House wants the study to be reviewed, Dr. Rall wants the study to be reviewed, but you are blocked from reviewing it by the contractor who conducted it?

Dr. GAGE. I question the judgment of Dr. Picciano in substantially his not agreeing to the review, and to the discussions with the review panel which Dr. Rall had assembled.

Mr. MOFFETT. Who is running the show? How did they block a review that the White House wanted that presumably the President wanted, that Mr. Costle wanted? How did they get away with this? What is your policy on such things?

Dr. GAGE. We were prepared to go into court at that time to seek all the test materials which Dr. Picciano had gathered as a result of this purchase order which had been issued to Biogenics. We are not going to leave anything unexamined in this particular case. If that turned out not to be the situation, we were ready to call out the U.S. attorney there in Houston to serve a warrant to get the data.

Mr. MOFFETT. We could call out the National Guard to get the study reviewed, but why is all this necessary with an outfit that is supposed to be doing a study for you? Is this typical?

Dr. GAGE. This is very abnormal. People seem under the glare of television cameras and the pressure of time to behave, more often than not, in a perverse manner.

Mr. MOFFETT. I have a whole host of other questions, but we have a lot of members here. Therefore, I will yield to my colleagues.

Mr. MILLER. I would like to clarify the last interchange. The data was available to EPA at all times. It was not available to people outside of EPA.

Dr. GAGE. I would like to add that Dr. Picciano has made—in fact, he made on Tuesday afternoon—all of the data available, the medical records on the 36 individuals, the microphotographs of all the chromosomes. We now have all that data. I have asked Dr. Roy Albert, who is professor of environmental medicine at New York University, to put together a review team which can over the next few days review that data very carefully.

Again, we express publicly regret that Dr. Picciano did not agree to the review by the panel which Dr. Rall had assembled, who are some very competent, very outstanding geneticists. Again, I think it was a real serious lapse of judgment on the part of Biogenics Corp. not to agree to that review last Tuesday.

Mr. ECKHARDT. Mr. Lent, you may proceed.

Mr. LENT. Thank you, Mr. Chairman.

As I said in my opening statement, I was concerned about the release of the chromosome study prepared by Biogenics in the manner it was released by the EPA by two almost simultaneous press conferences, one in Buffalo and one in Washington. I fear

that EPA may have, indeed, caused totally unnecessary additional anguish and anxiety to the residents of Love Canal.

I understand—and perhaps Dr. Gage can clarify—that this May 5, 1980, letter to Dr. Ulvedal of the EPA states, and this is by Dr. Picciano of Biogenics:

> We strongly recommend the cytogenetic analysis of a larger population of Love Canal residents along with a number of unexposed individuals before significance can be placed upon the results of our study.

Is that paragraph contained in the letter?

Dr. GAGE. I am looking for a copy of the letter here.

Mr. LENT. It is at the top of the second paragraph. It is contained in it.

In view of that strong recommendation, why did EPA decide to go ahead and release the results of the Biogenics report?

Dr. GAGE. The report had already been reported upon in the New York Times of Saturday morning. Copies of the report had been leaked to members of the press.

Mr. LENT. How did the New York Times get it; do you have any idea?

Dr. GAGE. I haven't the foggiest idea.

Mr. LENT. It had to come out of EPA?

Dr. GAGE. Not necessarily. In fact, I would say that the chances of coming out of EPA are very small. As pointed out several times before, Dr. Picciano had worked with members of the homeowners association there at Love Canal and with various other professional people in that area to gather the volunteers. I do not know who Dr. Picciano shared copies of his report with, but that report seemed to be more widely discussed around the Love Canal area and other places before he sent a formal copy to us.

Mr. LENT. Was any consideration given by the EPA back last January to conducting a more comprehensive study which would have possibly provided a basis for more meaningful conclusions?

Dr. GAGE. As I have reconstructed it in conversations with the individuals involved, there was every thought that if any kind of a signal of any excess abnormalities came from this fishing expedition, then a more detailed, much broader study then would be launched.

Mr. LENT. Why wasn't this done?

Dr. GAGE. I think there was very little thought that in fact the pilot study would give a strong enough signal to warrant spending hundreds of thousands in dollars conceivably——

Mr. LENT. You have had some indication, have you not, down there at EPA of the likelihood of abnormalities, the likelihood that this study was going to reveal the tentative or incomplete conclusions that it ultimately did reveal? Have you started such a study yet?

Dr. GAGE. That study has now been committed. We are committed to that study in connection with the actions which were taken yesterday. We will be seeking the best scientific counsel we can in designing that study in a totally credible way.

Mr. LENT. You started this yesterday, this more comprehensive study?

Dr. GAGE. As soon as we got results conveyed to us from Dr. Picciano, we began very initially thinking——

Mr. LENT. You got the study on May 5; right?

Dr. GAGE. No; that is not true. We got the study last Thursday. Dr. Picciano's letter is dated May 5, but the study did not arrive in our office until last Thursday. I cannot explain the discrepancy.

Mr. LENT. Before last Thursday and even before May 5, none of the preliminary findings of Dr. Picciano were conveyed to representatives of EPA?

Dr. GAGE. As I have said, one staff member who is a member of the Hooker Chemical case investigatory team knew of those results. He had been asked not to share those results with other people in the agency until the appropriate legal actions had been developed by that investigatory team and the Department of Justice.

Mr. LENT. Were you aware how small a test group was actually selected by Dr. Picciano? As I understand it, there were 36 subjects.

Dr. GAGE. As of Thursday I knew.

Mr. LENT. Were you aware that approximately 20 of those 36 had some sort of pre-existing medical history of problems?

Dr. GAGE. Dr. Picciano points out that was one of the criteria he used in selecting people for the study.

Mr. LENT. Did you have some control? You commissioned this study, did you not, or the Justice Department did?

Dr. GAGE. Yes; the Justice Department asked us to commission this study. The study, again, was very poorly designed from the point of view of trying to extract any scientific information. It did not have controls, as we pointed out and as Dr. Picciano pointed out. Probably worst of all, it was self-selecting in that the people who met one of those three criteria which I indicated earlier volunteered for the study.

Mr. LENT. Didn't EPA design the study?

Dr. GAGE. No.

Mr. LENT. You indicated earlier that the Justice Department came to EPA and asked you to commission this study. Who drew up the parameters or the design of the study?

Dr. GAGE. The study was basically designed by Dr. Picciano. Again, I will repeat, this study was really a very small $10,000 study, a fishing expedition, to see if some signal of abnormalities could be detected in the chromosomes of individuals most likely to show those effects in the Love Canal area. If such signal then came forth, then it was the conception of the individuals involved that they would launch a larger study.

Mr. LENT. Didn't the EPA realize the selection of a test group largely with medical problems had to result in above average incidence of abnormalities?

Dr. GAGE. I cannot say what thoughts were going through the minds of individuals who put this fishing expedition together. I think they probably suspected that they had the greatest chances of getting excess abnormalities, but many of the other studies which had been done using human cytogenic techniques like this had been equivocal, had been negative, and in general have not proved to be very useful in this type of work.

Mr. LENT. Do you have any idea who did the interviewing of the volunteers who were studied or whether these interviewers were experienced, qualified medical interviewers? Do you have any idea?

Dr. GAGE. I understand that Dr. Picciano, assisted by Dr. Beverly Paigen, interviewed the individuals.

Mr. LENT. When you suggest a group of people for a study who have a history of medical problems—for example, miscarriage, cancer, and I understand one of the people, perhaps more, had actually been treated with chemotherapy, and others perhaps were users of alcohol, marijuana, had had X-rays taken within recent periods—wouldn't all this type of history have the result of demonstrating some chromosomal change?

Dr. GAGE. Certainly from my small knowledge in this area, the individuals under those kinds of conditions with those kinds of life histories or medical histories would probably more likely have evidence of chromosomal abnormalities.

Mr. LENT. I have no further questions at this time.

Mr. ECKHARDT. I would like to clear up one point on this. Perhaps Mr. Miller can clear it up.

It seems to me there are two things that you could be aiming for in an investigation. One would be a study as to the danger, the level of danger, to all people in the area. The other would be a determination of whether or not there were the bases for a lawsuit against, say, Hooker with respect to damages done to some.

I fail to see that this study was faulty if it were aimed at the second objective, though it might have been a mistake to permit it to be revealed as throwing light on the first objective.

Would you comment on that?

Mr. MILLER. Yes. Basically it was the second objective. We have a wealth of data on the environmental exposure of the residents to toxic chemicals through the soil, the air, and the water. We have been trying to establish actual effect on people from that. This was one attempt to do so.

Obviously when you are designing a study for that purpose, you do try to look at the subjects who are most likely to have those effects. It was not designed as science, but as a piece of evidence. It was not designed to tell us how many people in the area might exhibit greater effects. We did have the intention from the beginning that if results were positive to followup with a broader study.

Mr. ECKHARDT. Mr. Gore?

Mr. GORE. Thank you very much, Mr. Chairman.

As I said a few moments ago, I really think that the dispute about the scientific makeup of this study is a side issue. I think the real issue is why a comprehensive health study was not made a long time ago.

I would like to ask the staff to provide witnesses with a copy of an Office of Management and Budget document that is from their files.

[The document referred to follows:]

EPA has no resources in its FY-81 research request for long-term health studies connected with hazardous wastes. We have, however, been given approval to document and determine the health risks associated with hazardous waste sites. This research will produce results in the latter part of FY-81 and in FY-82. Significant activities within the $3.0 million requested for health risk work include:

- o development of a screening and identification test system for the effects of hazardous waste on growth and organ function in neonatal animals (this work supports RCRA 3001);
- o development of a risk evaluation-dose assessment test system for animals to measure the formation of chemical specific hemoglobin adducts following exposure to hazardous wastes;
- o development of a portable neurotoxicity testing system to evaluate peripheral nervous system impairment in human population exposed to hazardous waste (EPA will recommend that this work be performed at Love Canal).

Mr. GORE. I would like to ask you, Mr. Davis, if you are familiar with the decision by the Office of Management and Budget to eliminate all money for health studies associated with hazardous wastes in the coming fiscal year.

Mr. DAVIS. Yes, Mr. Gore, I am not responsible but familiar with this statement. It was provided in a passback from OMB with regard to our 1981 budget request.

Mr. GORE. What was your budget request for health studies associated with hazardous waste exposure?

Dr. GAGE. I would have to provide that for the record. That was included as part of our formal budget submission to OMB and as part of the zero-based budget review package we provide to the Congress. We will very easily provide that.

[The information requested was not available to the subcommittees at the time of printing.]

Mr. GORE. Is it true the Office of Management and Budget eliminated all money for health studies associated with hazardous wastes?

Dr. GAGE. Yes; all the money associated with long-term health studies, associated with hazardous waste.

Mr. GORE. Why?

Dr. GAGE. I cannot completely recall the arguments used by the officials in the Office of Management and Budget. However, I think the gist of the arguments went along the lines that in terms of exposure to hazardous waste we are really talking about exposures through air, water, drinking water, and other environmental media. The resources provided to the Enviromental Protection Agency over the past several years have, in fact, grown fairly handsomely and were adequate to provide for assessments, depending on whichever media the hazardous waste or the toxic chemicals reached the human beings.

Mr. GORE. The record in this case illustrates the fact that that is simply not true. It wasn't done in this case. The reason you have panic in the Love Canal area today—well, the main reason is because of the hazards that exist there and the chemical waste that was dumped there. However, the reason these events occurred in the way that they did is that no health study was done years ago when it should have been done, when the first evidence appeared, and now the fragmentary results of this pilot study or probe were released and they tended to indicate the worst. Because there was no health study of a comprehensive nature, people had to assume the worst.

In response to the sequence of events that have occurred in Love Canal, I do not understand why the Office of Management and Budget would say, and I quote, "No program to establish an emergency capabilitiy in the health effects should be developed by EPA."

It seems to me that is moving in exactly the wrong direction. Our response should be to develop the capability within EPA to tell people in areas where they are exposed to hazardous chemical waste whether they are facing a health problem or not and, if so, what is the nature of that health problem.

Would you agree with that?

Dr. GAGE. I would agree with that.

Caught up in the discussions over superfund legislation, the response provided by the Federal Government earlier to the first emergency declared at Love Canal, and various other factors like this all apparently indicated to OMB that such an emergency response capability could well be "a budget buster"—requests for such emergency responses on the part of the Federal Government could become very financially onerous to the Federal Government and that this was one way to try to contain that.

We question that very strongly in our appeals to the Office of Management and Budget. Very frankly, I think we would still say publicly that we think that decision by OMB was an incorrect decision.

Mr. GORE. The Congress in the proposed superfund legislation is going to direct EPA to establish priorities as between different hazardous waste dumpsites to determine which should receive priority attention. Wouldn't health surveys be an essential part of an effort to establish such priorities?

Dr. GAGE. Absolutely. That should be probably one of the very key factors.

In addition, the various legislative drafts that I have seen do include in all cases resources or authorization for, and presumably resources for, monitoring studies and assessment studies. In other words, there would be a determination of whether or not there are hazardous chemicals in the area and whether those hazardous chemicals might be reaching human beings.

Frankly, I think all the drafts that I have seen fuzz the language as to whether or not human populations would be studied to determine whether, in fact, there is evidence in human beings that a chemical dose has been received or that health effects in fact are being manifested by those individuals.

Mr. GORE. That's not true of the Senate bill. I might just point you to the language of that bill. It says:

> The costs of epidemiological studies, development and maintenance of a registry of persons exposed to hazardous substances to allow long-term health effects studying and diagnostic services not otherwise available to determine whether persons in populations exposed to hazardous substances are suffering from chronic latency disease.

Now this section of the Senate bill would authorize expenditures for health studies related to hazardous waste exposure.

Mr. DAVIS. Mr. Gore, I would like to add to Mr. Gage's response. At the risk of being somewhat contradictory to what he said, my concern is—and I think the administration's concern has been—that in most cases of hazardous waste disposal the impacts on human health have not become as apparent as they have in Love Canal. I would say that probably there are fewer than 100 cases, which would be the ranking required in the Florio bill, that would have developed as far as Love Canal has developed, in which case health studies may not be able to detect anything at that point.

That does not say that damage has not been done and will not show up 10 years later, but the state-of-the-art simply is not good enough to detect these things. It is difficult even in Love Canal.

Mr. GORE. Yes; but there are certain tipoffs. There are certain health problems that occur in all of these areas. You have problems with pregnancies. You have spontaneous abortions. You have

birth defects, respiratory problems, skin problems, and an elevated incidence of cancer.

In many of the sites that the Oversight and Investigations Subcommittee has investigated for the past 3 years all of those elements are present. Only in Love Canal and in Memphis, Tenn., in response to a direct request from this subcommittee, have any health surveys been conducted.

When we had the first hearing on Love Canal we had residents of an area in Tennessee, in Hardemann County, Tenn., and no health survey has yet been conducted on those people to determine whether or not they face a long-term risk of cancer or whether or not the birth defects present were indeed caused by the exposure to chemical waste that was clearly present. I am not sure you can support the statement that there are not health problems of the kind suffered in Love Canal at many, many other sites around the country.

Mr. ECKHARDT. Would the gentleman yield?

Mr. GORE. I will be glad to yield.

Mr. ECKHARDT. I recall the Corrigan road case where we sent our own investigators out and they became ill picking up the samples from the road.

Mr. DAVIS. I could not agree more with your comments. My comment is meant to be a constructive one in regard to dealing with the superfund legislation.

Mr. GORE. Do you support the Senate language that I read? Does the administration support the Senate language I read, making explicit that it is OK to spend money for health studies in this area?

Mr. DAVIS. Our bill does not deal with medical damages.

Mr. GORE. Why not? Do you support spending money for health——

Mr. DAVIS. Let me answer one question at a time.

If you are going to have a bill that deals with medical damages, you must have some provision for studying the medical effects.

Mr. GORE. Now wait a minute. You don't even have to get to that question. If you are going to have a bill that requires you to set sensible priorities in where you are going to focus your cleanup effort, you have to have health studies for that purpose, don't you?

Mr. DAVIS. I believe you need that as one of the tools. My point is we do not want to be put in the trap that the industry would like to have us put in of having to show smoking gun effects before we can take action.

Mr. GORE. That is not the point. This language would not require you to do that; it would just allow you to look at a health problem

Mr. DAVIS. I can agree with that. My only point is that the language that goes along with that provision, accompanying language and history in earlier versions that I have seen, would in some cases put us in a position of not being able to act unless we had that evidence.

Mr. GORE. That is not what I am saying at all and not what I am proposing.

Mr. ECKHARDT. Will the gentleman yield?

There is no such limiting language either in the Senate bill or in the bill which I introduced, H.R. 6931. It only gives the capability of making the studies.

Mr. GORE. That is my understanding also, Mr. Chairman.

In conclusion, I think it is in many ways ironic that this latest episode in the tragedy of Love Canal would occur immediately after the House Interstate and Foreign Commerce Committee's consideration of the legislation that grew out of the first appearance of tragedy at Love Canal. I would hope with this additional episode in the tragedy and with all of the evidence compiled by this subcommittee over the past 3 years, that we will be able, working together, to improve the legislation that will soon be coming to the floor of the House to put in a section allowing a Federal cause of action for citizens damaged by exposure to hazardous wastes, as I proposed in the subcommittee, and eliminating these new defenses for companies to use against lawsuits brought by the Federal Government, increasing the size of the fund so that it will be effective in dealing with these sites around the country, and having a more equitable split between the contribution made by industry and the contribution made by the taxpayer.

Thank you, Mr. Chairman.

Mr. ECKHARDT. Mr. Walgren?

Mr. MILLER. May I add a point to what Mr. Davis was saying?

I think what Mr. Davis was trying to get at is that Congress and this committee should understand that in most cases when we look for health damage at these sites, we are not likely to find increased miscarriages three, four, five times what you would expect in terms of national average. What you are most likely to find are things like increased chromosome damage. We are at the cutting edge of science here. We know that they are associated in some way with cancer and mutagenicity, but we do not have any statistical coordination. We are very much pushing science. It would be hard to get real hard medical data of the type that people are normally used to making decisions on.

Mr. GORE. You are not pushing it very hard.

Mr. ECKHARDT. Mr. Miller, I do not think we are talking about requiring proof of an actual statistical incidence of damage before action is done. It is absolutely obvious, for instance, that on a road in Corrigan, Tex., where there is nitrobenzene on that road, that it is going to be injurious to human health whether or not you can get a statistical sampling of the community to find out whether they have chromosome damage. All you have to do is smell it and you get sick. Whether it does anything permanently is not the question. Certainly that should not be done.

However, the problem that I think we have here on this subcommittee and on the subcommittee that Mr. Moffett chairs is this: Industry comes in and says, "Look, there is nothing wrong with this stuff. It is not dangerous. You don't have to fool with it."

If Government does not have a way to respond by utilizing funds to make studies, it seems to me it absolutely prevents us from staying in a position of determining priorities with respect to cleanup.

Would you not agree with that?

Mr. MILLER. I agree with that but want to caution you that the next thing industry will come in and say is, "Well, what if there is chromosomal damage? You don't know that it is in fact going to lead to cancer."

Mr. ECKHARDT. I would like to hear them say that. I would like to see how far they got with the public on that. I think they would bring down on themselves the most restrictive law that has ever been enacted. They would also have enforcement that would go 10 times beyond what we are doing today. I would challenge them to say that—that chromosomal damage is not really important although we have found it.

I think I have occupied too much of the time.

Mr. Walgren?

Mr. WALGREN. Do I sense a feeling in EPA that you feel that it is not best to look for this specific damage, like chromosomal damage, because you do not want to be put to the burden of proving that is harmful?

Mr. MILLER. No, sir.

Mr. WALGREN. Where I get that is Dr. Gage said that studies on chromosomal damage are inconsequential. I think the words were not useful. They have not been useful in the past.

At the same time, Mr. Miller said we are very likely to find chromosomal damage. It is clear that no look-see for chromosomal damage was done here until the Justice Department required that to be done for their own purposes with regard to the environmental role of EPA.

I have a great deal of trouble understanding why EPA did not look for this in the first place.

Dr. GAGE. Let me try to explain that, Mr. Walgren.

The studies which have been done of human cells in the past, looking for these cytogenetic effects, have been done almost exclusively with occupational populations—in other words, people who work in industries and are exposed by comparison to these levels found in Love Canal, that is, quite high levels. The results of even those studies of occupational populations have been very equivocal. Very little excess abnormalities have been found during those studies.

Now we talk about exposure levels maybe one one-hundredth or one one-thousandth of, say, the OSHA recommended standards in the Love Canal area. To think of spending, out of a tight budget, a lot of money to do cytogenetic studies resulting in probably—at least it was thought, and this could be categorized maybe as only a conventional wisdom up until recently—no excess signal of these chromosome abnormalities.

It is not a matter of not wanting to look at a problem because we are afraid that we might see more problems there. It was a matter of trying to figure out how best to spend our money to find the best correlation, to design the best studies to get the best correlations, between all types of environmental pollutants and various human disease conditions.

Mr. WALGREN. This is an instance where we spent $40 million, be it State or Federal, to apparently erect a temporary containment of a small area of land. Yet, we did not bother to spend $10,000 to look at the chromosome damage.

Dr. GAGE. This has been discussed. It has been discussed quite openly.

Let me make sure that you all realize that the Federal Government did provide $4 million to the State of New York, $1 million of which was earmarked for health studies. We are not sure whether the State of New York has even spent all of its money, but certainly before it had spent all of its money the State of New York had prepared an additional proposal which would have had a fairly large cytogenetic study done of the populations living there in the Love Canal area.

That proposal—or really pre-proposal—was sent to EPA to review. I had my staff review that. Frankly, looking at the design of that study, which had admittedly been put together very quickly, and looking at the hypotheses that were going to be tested in that study, we did not feel we wanted to put any more of our scarce resources into such a study—in other words, add more than the $1 million to the State of New York for doing such studies.

Frankly, I would just say that the State of New York had the option of spending part of that $1 million on such a cytogenetic study if, in fact, they felt that was one of the highest priority studies to be done.

In fact, after consulting with a number of scientists, we did get a very strong sense from them that in fact we probably were not going to get very useful information in terms of really assessing what the health risks were to people there or getting back information which would be helpful in determining what the long-term health effects might be.

Mr. WALGREN. In view of what you know of the pilot study results, does it strike you that chromosomal studies with respect to hazardous wastes as opposed to industrial exposure of very limited amounts might be more fruitful?

Dr. GAGE. I can only give you a conditional answer. They may be. I think the first thing we have to do is to complete the design of the study which would look at a representative population in the Love Canal area and in the broader Niagara Falls area and do a cytogenetic study in a fully scientifically credible way, and then we will have an answer. We might have an answer which might be applicable to the other hazardous waste sites around the country.

On the one hand, we have to keep in mind the possibility that that answer from a study may indicate that there are no statistically significant differences in the abnormalities. On the other hand, we may get back a very strong answer.

In my estimation I think we have to characterize Dr. Picciano's data as very preliminary data and use that data to design a new study, and not necessarily make any decisions, which we have not, on the basis of that data for precipitous public action.

I would characterize the whole thing that has occurred over the past few days as just that additional amount of energy which was added to a very unstable system—sort of like a rock sitting on the side of the hill. It does not take very much of a tremor in some instances to loosen that rock and start it rolling down. It is a combination of that, some of the results that were being discussed up there in the Love Canal area by Dr. Barron and Dr. Paigen—

you will hear from Dr. Barron next, I guess—that provided that extra energy.

Mr. WALGREN. Thank you, Mr. Chairman.

Mr. ECKHARDT. Mr. LaFalce?

Mr. LAFALCE. Thank you very much, Mr. Chairman, for allowing me to question.

Dr. Gage, it is the position of the Federal Government, is it not, as expressed explicitly in lawsuits and at a number of other times, that an imminent and substantial danger to the health and welfare of the residents of the Love Canal exists? Is that correct?

Mr. MILLER. That is the gist of the lawsuit.

Mr. LAFALCE. Isn't that the specific wording of section 703?

Mr. MILLER. Yes.

Mr. LAFALCE. That is what the allegation is.

I think it is important to put in perspective the totality of the reasons which led to the judgment yesterday and which I hope will lead to permanent relocation. It is not merely the study of Biogenics; is that correct?

Dr. GAGE. Absolutely not.

Mr. LAFALCE. It is the totality of the evidence that you have adduced from day one to the present; is it not?

Dr. GAGE. That is right.

Mr. LAFALCE. It was the Biogenics study that tipped the scales in the formation of your judgment; was it not?

Dr. GAGE. I would say the Biogenics study, the Barron-Paigen study in the neurotoxicological effects which was starting to emerge just at this time, and the general situation there in the Love Canal area. This decision which is made is a decision of public policy. It is not a scientific decision.

Mr. LAFALCE. Could you give me all that other data that is on the scales? That is, what tests, however inadequate, were taken from day one to the present? What were the results of those tests which in their totality led you to your conclusion?

Dr. GAGE. Mr. LaFalce, I could spent quite a lot of time going over this. We have prepared a narrative. I also have a list of the various studies. I could submit these for the record or I could go on at great length.

Mr. LAFALCE. I would be very glad to have those submitted for the record.

Mr. MOFFETT. Without objection, those will become part of the record.

[The material referred to was not available to the subcommittees at the time of printing.]

Dr. GAGE. I would summarize very quickly that what we have is a combination of environmental exposure studies and a few health studies.

In the area of environmental exposure studies over a period of roughly 2 years, quite a number of air, water, and soil samples were taken and analyzed with a very consistent pattern showing fairly significant levels of a number of industrial chemicals which were known to have been disposed of in the Love Canal area. Some of these chemicals are known or suspected human carcinogens. Quite a number of them are animal carcinogens.

I will just name a few, such as benzene, chloroform, trichloroethylene, tetrachloroethylene, chlorodibromomethane, and bromodichloromethane. These were all found at levels which were not just environmentally statistically significant, but at levels which would cause some alarm, particularly in terms of ingestion in drinking water or certainly breathing for long periods of time, such as in the living quarters of homes.

In the area of health effects or indicatory tests, which were run by a number of people in the area, there were measurements of the levels of toxic substances in the blood and I believe other body fluids of Love Canal residents. For instance, there was measured last summer in the blood of a number of the residents such chemicals as methylchloroform, trichloroethylene, tetrachloroethylene, and chlorobenzene. By comparison, those substances were not found in the blood of over 250 Miami residents, which were used as the control group against which these were measured.

This, I would indicate, was just a new technique which was just validated in the past year by researchers in Florida.

Mr. MOFFETT. Would the gentleman yield?

Mr. LAFALCE. Yes.

Mr. MOFFETT. I think the central question here is this, Mr. Gore raised it: Is the administration or is it not—and I am talking about the administration now—supporting legislation to create an organized authority within the appropriate agency, your agency, to systematically survey health with regard to these matters? Is that a fair question? It seems it is the central question for us.

Mr. DAVIS. The administration bill on the superfund is the only legislation that I am aware of which addresses this. This has been a point of contention, which I would be glad to respond to.

That does not compensate for medical damages. It does not compensate for medical expenses. Therefore, it does not include, to my knowledge, funds for health studies.

Mr. LAFALCE. I would like to followup on that.

It is one question as to whether superfund should contain funds for health studies. However, the Federal Government has been known in the past to be somewhat concerned about health. We have had for some period of time a Department of Health, Education, and Welfare. We have had an Environmental Protection Agency concerned allegedly about health. We have had within the Department of HEW a Center for Disease Control, a Public Health Service, a National Institute of Environmental Health Sciences, a National Institute of Occupational Safety and Health. The word health is not foreign.

The question that I have in my mind is not so much what studies will be done pursuant to the authority of superfund, but what studies in your judgment should have been done 3 years ago, 2 years ago, and 1 year ago. Clearly you have decided as of yesterday to conduct studies in the future.

What were your thoughts about making those studies years past when you were aware of the problem? Did you not have adequate enough legal authority, aside from the question of money, to conduct those studies if you made that decision?

Mr. DAVIS. Mr. Gage may want to respond, but I would like to clarify for Mr. Moffett.

The superfund bill by the administration would permit money to be used for health studies needed to determine if a threat exists. Our priority was directed toward cleaning up the site, trying to eliminate the threat. If a health study is needed to determine whether that threat exists, then we could conduct it. However, the health studies in our bill would not be allowed in order to assess damages in order to allow for compensation for the court process, for example.

Mr. MOFFETT. I appreciate that clarification. I do not want to interrupt the gentleman from New York's questioning because he has left a question hanging in the air here that is very important.

However, let's face it, EPA is trapped in the politics of balanced budget. That is what you are trapped in. That is what these people in Mr. LaFalce's area are trapped in.

Mr. Gore was talking about the irony of this whole thing, having all this come to light right after the superfund was considered by the Commerce Committee. It is also ironic because it comes at a time when so many people and politicians are screaming that balanced budget will be our salvation. Theoretically we can balance the budget, and still treat situations like Love Canal. However, we know the politics of balanced budgets will not allow this.

Mr. DAVIS. I would also point out I think Congress is caught in the same trap at this point. Mr. Gore pointed out earlier that the bill reported out of the Commerce Committee in his opinion—and EPA shares this view—is grossly underfunded. To some extent if those funds were at the level we have recommended and felt would be adequate, we would not have the problem of ranking. We would not have to do the extensive health studies to rank these cases. There would be enough money to deal with all important studies.

Mr. GORE. Would the gentleman yield briefly?

Mr. LAFALCE. At some point I would like my question answered.

Mr. GORE. The amendment I proposed in the Interstate and Foreign Commerce Committee, and which I will again propose on the floor of the House of Representatives, would have doubled the size of the fund without increasing by 1 penny the amount of money contributed by the taxpayer from the general revenue of the United States. It would have changed the mix of contribution from 50–50 to 25–75 and would have tripled the contribution from the fee on the processing of hazardous chemicals. We can solve both of these problems and we can be responsible with the budget and with fiscal policy and at the same time address the very serious problem of hazardous waste.

I wanted to comment on this question that you were addressing. So long as this OMB decision stands, in the coming fiscal year you will not be able to perform any health studies associated with exposure of people to hazardous chemical wastes.

Mr. Chairman, I had neglected earlier to ask unanimous consent to include in the record of this hearing the entire text of the OMB memorandum from their files on this. I would like unanimous consent to include at that point where I referred to it.

Mr. MOFFETT. Is there a date?

Mr. GORE. I will supply that for the record.

Mr. MOFFETT. Without objection, that will be considered part of the record [see p. 30].

The gentleman from New York still has that question hanging. Do you recall what the question was?

Dr. GAGE. Why weren't there more comprenhensive health studies initiated earlier? As I indicated several times before, we have provided—Congress appropriated and we provided—through a cooperative agreement with the State of New York $4 million, $1 million of which was earmarked for health studies. The State Department of Health in New York we felt had been most closely associated with this. In fact, they had been involved very closely during the earlier emergency and had been using the money, the $1 million, to undertake a number of studies.

Mr. LAFALCE. Dr. Gage, is it not——

Dr. GAGE. As far as I know, Mr. LaFalce, to my last knowledge they had not spent the entire $1 million.

We have had under discussion with them for the past 6 months a variety of studies which that department of health, which is one of the best in the country, has proposed. Yet, they have not come to a concrete position on which additional studies need to be done beyond those which they have already conducted with the resources we have provided them.

Mr. LAFALCE. I am intimately familiar with how we came to have that $4 million. I was in on the negotiations with the State health commissioner, with Doug Costle, with Peter Berling, Senator Moynihan, and Senator Javits. I am also aware of the fact that approximately 1 year after we appropriated that $4 million EPA hardly picked up the phone to talk with the officials from New York State about it.

I am aware of the fact that about 1 year after we had appropriated the money I had to bring Administrator Costle to my office, along with one David Ubber from EPA who is allegedly responsible for administering the use of that $4 million. Up until that point in time there had been virtually no dialog between EPA and the State government regarding it.

I am also aware that from that point in time, about 1 year after the appropriation, of the meeting in my office, there has been constant confrontation between the Federal Government and the State government. The point is who has borne the burden of this. It has been my people.

The point is that comprehensive studies and testing that you say still must be done have not been done primarily because of bureaucratic bungling.

Mr. ECKHARDT. The gentleman's time has expired.

Gentlemen, would you stay at the panel table while we have our next panel? Would that be convenient?

Mr. MOFFETT. May I ask one more question?

Mr. ECKHARDT. Surely.

Mr. MOFFETT. I am still confused on the subject of this Biogenics firm. Who are they? How were they selected? What is EPA's policy and what can we expect it to be in the future with regard to access to such studies?

Dr. GAGE. The Biogenics Corp. is a small firm located in Houston, Tex., of which Dr. Dante Picciano is one of the leading scientists in that firm. As I understand it, he was selected because he had been doing a great deal of human cytogenetic work, particular-

ly in connection with occupational exposures. He had previously worked with Dow Chemical Co.

Mr. MOFFETT. Is it true that he left Dow Chemical after a dispute over the quality of his work?

Dr. GAGE. Well, probably a dispute over the quality of the work and also the implications of the work for Dow Chemical, particularly in the benzene case.

Mr. MOFFETT. Did EPA know of that difficulty and so forth when they selected him?

Dr. GAGE. Yes; Dr. Picciano's reputation and his controversial nature was known to the scientists from EPA who participated in that, but we certainly have not been an agency that has walked away from controversy, Mr. Moffett.

Mr. ECKHARDT. We will now call panel No. 2: Dr. David P. Rall, Director, National Institute of Environmental Health Sciences, Department of Health and Human Services, and Dr. Stephen Barron, assistant professor of neurology, University of Buffalo.

Please come forward.

Gentlemen, do you swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Dr. BARRON. I do.

Dr. RALL. I do.

Mr. ECKHARDT. Who wishes to go first? Dr. Rall?

TESTIMONY OF DR. DAVID P. RALL, DIRECTOR, NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES, DEPARTMENT OF HEALTH AND HUMAN SERVICES, AND DR. STEPHEN BARRON, ASSISTANT PROFESSOR OF NEUROLOGY, UNIVERSITY OF BUFFALO, ALSO AT THE TABLE ARE DR. STEPHEN J. GAGE, JEFFREY G. MILLER, AND SWEP DAVIS OF EPA

Dr. RALL. Thank you, Mr. Chairman and members of the committee. I am very pleased to be here.

I do not have a formal statement. I have submitted some material to the committee this morning. Perhaps I might explain what I have submitted and say a few words about what I think is the primary issue today: Are the illnesses and symptoms of the Love Canal residents in any way associated with exposure to the toxic wastes?

You have before you a report of HEW, now HHS, Subcommittee on Potential Health Effects of Toxic Chemical Dumps that we are releasing today. This report, I might say, was stimulated by the interest of Congressman LaFalce. It is an attempt to look at the scientific basis, the scientific tools we have, and the problems we face in trying to assess human health damage when faced with a Love Canal or similar type of problem. This report was prepared with scientists from the Environmental Protection Agency.

Before I spend a few minutes describing the report, HHS has over the past 6 months been reviewing our own methods and organization for response to chemical emergencies. We have been working actively with EPA to better coordinate and cooperate in this effort.

Parenthetically, we had a meeting scheduled with high level EPA personnel on that fateful Friday that we all ended up meeting in the White House instead.

The report goes into a number of issues: locating dumps and identifying chemicals within those dumps, which I think is not important for this hearing; the clinical, epidemiological, and other tools that we have or may need to develop to examine effects on human populations; the need for registries; the need for better toxicological data bases; tools for short-term toxicology; problems of health care services in the dump area; and training of health care professions.

We have, in addition, an appendix listing the chemicals known to be in Love Canal some months ago and a brief résumé of what is known about their toxicity. I think you will find that very little is known about their toxicity. Many of the chemicals have essentially not been studied at all. That, to me, is a very disturbing situation.

There has been some discussion this morning about the use of health surveys and epidemiological studies to associate exposure to chemicals or exposure to the effluent from a dump to human health effects. This is a very, very difficult problem, indeed.

Epidemiological studies flourish in the infectious disease field beautifully because you have a marker in the body when the person has been exposed to the infectious disease. Chemical epidemiology is such that we do not yet have those markers. We simply do not know. Acute effects are easy to detect, easy to associate, with exposure to a chemical. Chronic effects, which with pregnancy outcomes may take 9 months or with cancer 20 years, are very, very difficult.

In the scientific laboratories we are in the process of developing a whole series of tests which will allow us to sample from a patient easily, and I hope noninvasively, and get some indication of damage to the DNA, the creation of somatic mutations, chromosome aberrations, and so forth which would let us predict that those people may have been subject to a chemical which could cause cancer.

We have an extensive, and I think excellent, discussion of this in the appendix to this report. I would urge, if not the congressmen, at least the staff to read that because I think it is very important. It is technical. We would be glad to discuss this with you later on.

The bottom line is we are not ready really to use any of these methods we have. It will be at the earliest 1 year and more like 3 or 4 years before the research will have progressed far enough for us to use these new methods.

Now another way to associate potential health problems with chemical exposure is to identify the chemical and study the toxicity of the chemical in laboratory animals. This has historically been a very effective way of projecting health problems.

Some of these studies take many years and are inadequate for neurobehavioral effects and for reproductive effects. We in the national toxicology program in HHS are trying to develop better test methods precisely to identify these effects from chemicals very rapidly indeed.

One area that we have not addressed or have addressed inadequately concerns the toxicity of chemicals acting together. This is the problem in Love Canal where those residents were exposed to not a dozen, but to perhaps two or three dozen or more chemicals at the same time. We do not have the scientific tools today to

estimate the toxic effect of 12, 23, or 36 chemicals to which a person may be exposed simultaneously. That, to me, is a very urgent item on our research agenda.

Mr. MOFFETT. Dr. Rall, how does that relate to the Federal budget right now and what you see happening at OMB?

Dr. RALL. It will be a very expensive process. It may take $1 million to adequately study the toxicity of a single chemical. To study two, three, or four chemicals together it will cost very much more. It is a very expensive process, and yet I think it is a very critical process.

With the formation of the national toxicology program, we have had some increases and are certainly able to start.

I would just add one more point before I close. It is somewhat different, but I think one of the major problems we face is that the physician and the health profession are not well educated on the problems of chemically induced diseases.

Let me just recite the example of the workers who were exposed to kepone in Hopewell, Va., who had very dramatic shakes. They went to a number of different physicians before one went to a doctor who said, "Have you been working with any chemicals lately?" These workers went to several physicians before that question was asked, and, of course, that was the crucial question.

Once the answer, "Yes, I work in a little chemical plant," was given, the plant was identified. CDC identified kepone in the workers' blood. The scientific problem was solved at that time.

We must make more effort in educating physicians as to the diseases chemicals can cause.

Thank you.

Mr. ECKHARDT. Dr. Rall, EPA said yesterday that temporary relocation of those 700 Love Canal families will last until long-range studies of the environmental exposures and resulting health effects suffered by the affected families are completed. Then they estimated that would take several months.

Do you think that is a sufficient period of time to make such a determination?

Dr. RALL. I think several months is a sufficient period of time. There are chemical exposure data which I think are very important. I would go along with the concept that one need not absolutely prove human disease if you can prove human exposure to reasonably high levels of chemicals. Certainly that is reasonable.

Some of the existing studies—a better survey of reproductive outcomes, some genetic tests which are, as Dr. Gage said, at the cutting edge of science—could provide useful information.

I would be delighted to hear what Dr. Barron says on nerve conduction studies. I think these could be very useful.

There are tests for immunological competence easily performed in people. These could be of use and of great interest.

Monitoring children for growth and development—are they growing as rapidly as a normal child would—this could be very useful.

Certainly these studies could be done in many months, but I think you also must pay great attention to the concrete evidence of chemical exposure.

Mr. ECKHARDT. The Biogenics Corp., which conducted the pilot cytogenetic study for the 36 Love Canal residents, has recommend-

ed to the EPA that three genetic toxicological studies—cytogenetics, body fluid analysis, and fluorescent study of sperm—be performed on as many persons as possible.

Do you feel this is enough or should there be other examinations?

Dr. RALL. Basically there are a variety of sperm tests. I am not sure that they are recommending the best but; yes, I think there clearly are sperm tests that ought to be done.

The mutagens in body fluids are still not validated, but they certainly would be interesting. Cigarette smokers persistently have mutagens in their urine. People who are exposed to anticancer drugs, which tend to be mutagenic and carcinogenic, also have mutagens. It is still not quite standard procedure.

These are the sorts of tests that ought to be done.

Mr. ECKHARDT. Can you give us an indication of the size of the contemporary control population that would be necessary to conduct properly the types of definitive studies that EPA is undertaking with respect to several thousand persons comprising the 700 families in the area?

Dr. RALL. In general, the control population should be about the same size as the exposed or treated population.

There is one other interesting possibility that I think ought to be done, and done very rapidly. Many of these cytogenetic abnormalities are transient. They come and go. I think it would be very useful and perhaps very reassuring to, as soon as possible, retest those 11 people who were positive. Some of them may well have reverted to normal. I think that would be reassuring to the people and probably ought to be done.

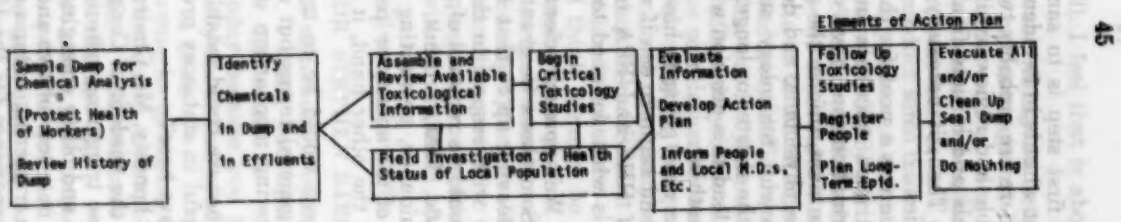
Mr. ECKHARDT. Obviously temporary relocation is a traumatic situation for the people involved. In your opinion is there any way that you can determine when health studies should be done respecting people living in an area similar to the situation involved here?

Dr. RALL. I also distributed to the committee a draft of mine. I will take credit and blame for it. It is an attempt to put together in a flow chart the steps in evaluation of potentially hazardous dumps.

[The flowchart follows:]

DPRall:5/2/80

STEPS IN EVALUATION OF POTENTIALLY HAZARDOUS DUMPS



Dr. PELL. The first step is to sample the dump or review the history to find out what is in it—identify the chemicals.

Then I think there are probably two parallel things that happen. You must assemble and review available toxicological information on those chemicals and initiate field surveys of the health of the local population. Then, if necessary, begin certain of the critical toxicological studies.

Then I think there is a need for the people involved, the workers in the field and good scientists in this area, to sit down and evaluate the information they have, develop an action plan of what is going to happen next, inform the people, inform the local physicians, educate the physicians, and develop what we would call an action plan—followup toxicology studies, register of people involved, planning the shorter or longer term epidemiological studies. That then would lead to a decision which could vary from evacuate everybody or do nothing.

The meeting we were going to have last Friday was to try to sit down with EPA and begin to see if we could flesh out the various responsibilities of HHS and EPA in these steps. This sort of a logical sequence is what we need to attack future toxic chemical waste dumps.

Mr. ECKHARDT. We approach scientific questions in two different ways by statute. Sometimes we grant great authority to an agency to act in a field leaving up to that agency almost unlimited rulemaking authority with respect to the standards under which, for instance, there would be removal of persons from an area or studies would be made. That, I think, has the flaw of perhaps not giving enough guidance, permitting perhaps a lackadaisical attitude on the part of the agency or perhaps not sufficient attention to a problem. On the other hand, it might be an overkill in some cases.

The other process would be to try to establish such statutory criteria in fairly general terms but describing at least the framework of the triggering mechanism under which studies would be made.

Do you think that we could establish criteria of the latter type that could be helpful in statutory provisions relating to a question like the one we have here?

Dr. RALL. In all honesty, Mr. Chairman, and not wishing to make any comment on the wisdom of Congress, I do not think we know enough to set those triggering criteria now. I would hope we could study Love Canal and other emerging problems very carefully and come back to you in a year or two and say, "We think now we have some idea of what triggering criteria ought to be."

This is a new experience for the United States. We really, until 2½ years ago, were almost totally unaware of the toxic chemical waste dump problem. How it sort of slipped the minds of the collective biomedical intelligence is beyond me, but it did. We were concerned about newly introduced toxic chemicals. We were concerned about air and water pollution. However, the fact that every year 66 million tons of toxic chemical wastes were being dumped somehow never reached our attention. This is a new problem.

I do not think we are handling it well, but we are handling it not well because we do not know much. We are learning as we go. Two-

year-olds do not walk very well. I feel that is about where we are scientifically in this area.

Mr. ECKHARDT. Mr. Gore was raising an interesting question which raised the implication of criticism against OMB or, in effect, playing down the need for studies and playing up the need for cleanup. We had some colloquy here as to whether or not you can do the one without the other, whether or not you can put the emphasis on cleanup and not conduct some manner of studies. You heard the discussion. I wonder if you have a comment on it.

Dr. RALL. I hate to disagree with OMB, particularly publicly.

Mr. ECKHARDT. I have never found it too difficult.

Dr. RALL. It does seem to me we must have the medical studies. We must develop a set of criteria as to which dumps need cleaning up, which is very expensive and very difficult, and which don't. The only way I know to find that out is by careful investigation of the health status of the people affected by those dumps.

Once you begin to make some correlation between what is in the dump, what is the geochemical, what is the geology, are underground aquifers affected, and so forth, then maybe in the future we can begin to say, "Hey, this dump looks OK. Just post signs, but we don't need to clean it up." That is a lot cheaper.

Therefore, in the long run I think it might be less expensive to do good health studies of selected dumps so that we can get some indication of which are likely to be the most serious in which we ought to put our money into cleaning up and sealing.

Mr. ECKHARDT. Does the committee prefer to have Dr. Barron proceed now or do you have questions you would like Dr. Rall to answer? Dr. Rall, of course, will be available later. What is your preference?

If there is no objection, we will proceed with Dr. Barron.

TESTIMONY OF DR. STEPHEN BARRON

Dr. BARRON. I have no formal statement to open.

Mr. ECKHARDT. Mr. Moffett, I think you have some questions.

Mr. MOFFETT. Thank you, Mr. Chairman.

Dr. Barron, you are here today because you have conducted a study. Can you tell us very briefly about that study?

Dr. BARRON. I would be glad to do so.

I would like to initiate my remarks by saying I think whenever the term a study is used, a great many assumptions come to bear and come to mind immediately. I will continue to use the word study because other phrases are clumsy.

What I did is what I prefer to call a pilot project. At any rate, it was a small sample study to answer the question of whether there was enough information to be gained in the population at Love Canal to design a study to answer the question of was there evidence of neurotoxicity at Love Canal.

I started the end of 1978 to go through the usual peer review and human study subcommittee review. We started testing subjects in January 1980. It was the fall of 1979 that the study was initiated.

We were testing many parameters of nerve conduction which included the velocity of nerve conduction and included measurements of the height of the response amplitude. In brief, in a nerve conduction test a nerve is stimulated with a small amount of

electricity by a handheld electrode placed over the skin on that nerve. That electricity is conducted, and then something is measured further downstream on that nerve, whether it be a twitch response from a motor nerve or a conveyed response from a sensory nerve. These are well-known, routine, clinically used studies of nerve function in everyday practice.

From the list of chemicals that was published early, it seemed fruitful to inquire as to whether some of those chemicals could be neurotoxic. Some of them were known to be neurotoxic. Some of these have already been mentioned. Others have such similarity to those known to be neurotoxic that it seemed a fruitful area.

We were able ultimately to study 35 people. The entire area of Love Canal was queried. Leaflets were delivered to each household. People were asked if they wished to participate in the study. Those responding favorably were then contacted by a telephone contact and an extensive telephone interview was then undertaken to exclude people who had health or other factors which would be known to affect the nerve conduction study.

Diabetes, for instance, is probably the most common such factor. Consistent alcohol use is another such factor, as well as many medical illnesses and many medications. We made a very extensive effort to exclude such people. There was an extensive occupational history taken from the people. People were excluded on such criteria as having worked with chemical solvents 15 and 20 years before.

Despite the fact we had some 250 volunteers for the study, we were only able to cull out 35 such people that we thought were appropriate for the study.

As a control, or more precisely a comparison group, we used the same area of Niagara Falls but a neighborhood separated from the Love Canal by a creek with a deep streambed. This creek was thought to represent a barrier to the migration of chemicals from the canal over into the control area. We had 20 such controls. The controls were similarly screened.

The results by my very naive statistics seem to show a statistical difference in some of the crucial measurements between the Love Canal residents and the control area. I do not think anybody was particularly aware of my results. I had submitted them for an abstract, but no action has been taken on that.

That, in brief, was the study that I had done.

Mr. MOFFETT. So that we have the record clear, you had a control group in your study; is that correct?

Dr. BARRON. A comparison group; yes.

Mr. MOFFETT. That group did not show anywhere near the incidence of difficulties; is that correct?

Dr. BARRON. I stopped at this point. To be fully responsive let me continue to what I know about my data now.

On Friday of last week, which was a day of turmoil for more people than just myself, I had inquiry from the Environmental Protection Agency as to whether they could have access to my data. The basis of that inquiry was that an effort was being made to review all the health data that was known on people from the Love Canal area.

Mr. MOFFETT. Who asked you for that?

Dr. BARRON. It was a representative of Dr. Hunt's office.

Mr. MOFFETT. Where does he fit in?

Dr. BARRON. Dr. Hunt—I am totally naive——

Mr. LAFALCE. Dr. Gage's assistant.

Dr. GAGE. Let me help. He is my deputy assistant administrator for health research.

Dr. BARRON. It seemed an appropriate agency. I had no problem with releasing the data to that agency. I did have a problem, however, in that I had promised explicitly as part of the informed consent document and also eyeball-to-eyeball, as it were, to the people that I studied that they would hear from me first what the results of the study were, what their own individual results were, and what the significance of their results were if they differed from the study group. I intended to take a good several weeks of statistical analysis and make up appropriate forms and draft personal letters.

I told the representatives of EPA that I would be glad to share the thrust of the study, what I thought the study showed, and I would be glad to submit the experimental design scrutiny, but that I could not release or show them actual numbers. This was agreed to.

Because it was easier for me to fly to Washington than to get several people together to come up to Buffalo, we met in Washington on Saturday. What I did say I would say I said. The study was reviewed. The design of the study was reviewed.

I came back to Buffalo Sunday, did some more work, and on Monday I contacted all the individuals. I had a meeting with them at the Love Canal Homeowners Association.

Mr. MOFFETT. By this time their study, EPA's study, had been released.

Dr. BARRON. Yes, that is correct. This is after the Saturday——

Mr. MOFFETT. So when they contacted you, it had not been released?

Dr. BARRON. That is correct.

Mr. MOFFETT. Did you know what was going on within EPA at that time?

Dr. BARRON. No, sir.

Mr. MOFFETT. They did not say to you, "We are about to come out with this study"?

Dr. BARRON. No. They said that an effort was being made to collect all the known health data. I certainly did not think that meetings on Saturday were necessarily a routine way of collecting all the health data. I had a sense of some urgency about it. However, I had no idea of the context in which it was being placed.

Mr. MOFFETT. Please proceed.

Dr. BARRON. Amidst various people being taken hostage and the like, we were able to inform all who chose to come of their study group. I believe we did contact all but one person.

On Tuesday I flew with my data to have it turned over to EPA representatives at the Raleigh and Chapel Hill facilities.

Anybody who has ever seen their data subjected to that kind of rigorous statistical analysis will share my intimidation. At any rate, it was very extensively subjected to statistical analysis, believe me, over a 2-day period of time.

The features which I thought were significant lost their statistical significance, but what did remain was a weight, a trend within the data, that would be what one would predict if one were hypothesizing an effect.

Mr. MOFFETT. Do you feel secure in saying that on the basis of this whole experience and your research and having it scrutinized by other experts and so forth, there may indeed be a very serious problem in Love Canal?

Dr. BARRON. No, sir, I am not prepared to say that now. I am prepared to say that I am concerned enough to recommend that a definitive study, rigorously designed with experimental and controlled populations defined by professional epidemiologists with the consultation of a biostatistician, be done with some expeditious handling. I think that would be the strongest statement that would be supported by at least the numbers that I submitted.

Mr. MOFFETT. You know enough that you think there should be additional studies?

Dr. BARRON. That I feel quite strongly about.

Mr. MOFFETT. Mr. Chairman, I have one more question.

Dr. Rall, can you tell us how you felt when you were stopped from reviewing this chromosome study?

Dr. RALL. I have been a scientist now for around 25 years, and I have never heard of that happening before. The NIH works by peer review. Everyone's data is subject to scrutiny by outside experts.

Mr. MOFFETT. Had you heard of this doctor and had you heard of the firm before?

Dr. RALL. I had not heard of the firm. I knew of the doctor. I thought he was a technically competent cytogenetist.

Mr. ECKHARDT. Mr. Lent?

Mr. LENT. Dr. Barron, I would like to pursue the point that Mr. Moffett was bringing out. I think he asked you the question: Were you prepared to say that there are significant health problems at Love Canal? I think you said not at the present time or you indicated that you no longer held this belief.

Dr. BARRON. There were two points in my data, in the analysis of my own data. When I felt that results were statistically significant on the basis of a sample; yes, I would have gone ahead and, in fact, I now have to withdraw an abstract in which I did submit as a conclusion that a health problem does indeed exist. However, when the data do not support that conclusion—and I certainly defer to the statisticians who analyzed my data in such a rigorous way—then one has to back off with one's claims.

Mr. LENT. What were the early claims and what are the claims now?

Dr. BARRON. My early claim, which I am actually revealing to you now for the first time because I never made it publicly, was that there was a statistical difference in the nerve function of the canal residents versus the comparison area.

Mr. LENT. Now you feel what?

Dr. BARRON. Now I feel that there is enough evidence to say that should be looked for very, very carefully, but that the data no longer can be interpreted as saying there is one.

Mr. LENT. What you are saying, in effect, is that, having been educated, if you will, by EPA, what you thought was statistically significant before you no longer feel to be statistically significant?

Dr. BARRON. That is true.

Mr. LENT. I would like to ask Dr. Rall a question with respect to the other study, going back to the Biogenics study now, which I think Dr. Gage characterized as a fishing expedition earlier in his testimony.

Would you have released the results of the Biogenics study to the press at this point in time had there not been this leak?

Dr. RALL. I do not think anybody would have.

Mr. LENT. I did not hear you.

Dr. RALL. I do not think anybody would have released it, but you but the proviso in "absent a known or likely suspected leak."

Mr. LENT. Were you or your agency consulted by the EPA before they released the Biogenics report?

Dr. RALL. I was a member of that meeting at the White House Friday noon. That was the first I had heard about it.

Mr. LENT. What kind of further tests, in your opinion, other than Biogenics and the Barron test, need to be performed to properly evaluate the results to the population at the Love Canal site?

Dr. RALL. The entire health problem, not just the neurological or cytogenetic.

Mr. LENT. Is a test now being developed or described in some way?

Dr. RALL. We have been working on a research plan which we will discuss with Dr. Gage as soon as we get to meet each other in somewhat less formal circumstances.

Mr. LENT. I am glad we brought you together because I think it would be important. Dr. Gage testified earlier that they had made a decision, I think he said it was yesterday, to go ahead with a more comprehensive study.

Dr. RALL. Simply with the events of the last couple days we have not had time, but we will work with them to develop an integrated plan of approaching the health status of Love Canal.

Dr. GAGE. May I put in for the record that my boss, Barbara Blum, has already invited Dave's boss to a meeting at EPA at 11:45 on Tuesday morning. I was given the responsibility to invite Dave. I would like to do so at this time.

Dr. RALL. I got the message a little earlier.

Mr. LENT. Fine. I only wish we had gotten you two fellows together about 6 months ago.

Mr. LAFALCE. We should have gotten them together a long time ago.

Dr. RALL. In all honesty, there has in the last few months been much closer cooperation. As I pointed out, this report was put together with the help of the EPA people.

Mr. LENT. You say in that report that the review panel concluded that study does not provide definitive evidence for judging whether or not there has been demonstrated health damage to the people at Love Canal. That is your conclusion.

Dr. RALL. Yes.

Mr. LENT. I would like to ask you this question: Is it your belief that the residents of Love Canal ought to be relocated, as they are

apparently going to be, as a result of that Biogenics report, the Barron report, or any combination thereof?

Dr. RALL. Let me answer the question not quite as you asked it. I think there is good reason—and I am personally pleased—that the Love Canal residents are being relocated, but I think it is not due to the Biogenics report or even necessarily to Dr. Barron's report, which is of very high scientific quality, but the accumulated weight of evidence over the last few years. Each one of these studies, even though some of them have been statistically significant, has not been enormously persuasive in and of themselves. However, taken together, these studies convinced me scientifically that there was adequate justification for that move. I think personally I am pleased that these 700 families at least now have an opportunity to live away from the Love Canal area.

Mr. LENT. I am pleased for them also because I think they have been scared out of their wits by some of the publicity and the various interpretations of the different reports that have been floating around and reported in the media.

However, what I am trying to get from you, Dr. Rall, or from Dr. Gege is whether there was a medical basis for the move. I think this is important to determine because these evacuations can become very, very expensive over the long haul. They have traditionally been based on something more concrete than a lot of frightened people and medical reports that, once they are subject to scrutiny, are found out to be one thing, and what was thought to be statistically significant is found out a few days later not to be statistically significant. Doctors retreat from their statements and say they are no longer prepared to say there are significant health problems revealed in one report or another.

These evacuations, I think, ought to be based on something medically concrete. I am trying to determine if we have that here. Or are we making a political decision rather than a medical decision?

Dr. RALL. I am not involved in making political decisions, for which I am appreciative.

Mr. LENT. You said you were in the White House, didn't you, making a decision?

Dr. RALL. As a technical advisor.

Mr. LENT. But the decision was made in the White House.

Mr. ECKHARDT. Have we established who was there on that Friday when the decision was made?

Dr. RALL. A bunch of EPA types. You probably knew them better than I did. Myself; Dave Andrews, who is the Deputy General Counsel of HHS——

Mr. LAFALCE. Was it not under the auspices of Jack Watson?

Dr. RALL. Jack Watson; yes.

Mr. LENT. Who is Jack Watson, just for the record?

Mr. LAFALCE. The gentlemen probably know the answer to that better than I do.

Dr. GAGE. Jack Watson is a deputy to the President who is in charge of State and local government relations.

Mr. LENT. Were there any other political types that were there? You said EPA types.

Dr. GAGE. There were several other White House staff who I think almost all were on Jack Watson's staff. Then I believe there

were representatives of the Federal Emergency Management Administration and the Department of Justice. I think that probably pretty well concludes the group.

Dr. RALL. May I come back to your question because I think it is a very critical question?

First, this, to my knowledge, is the first evacuation because of long-term chemical damage. There have been lots of temporary evacuations because a tank of chlorine blows up and everybody knows chlorine is bad, so they get everybody out and it blows away in a couple days.

Mr. LENT. Let me just stop there. You said, "Long-term chemical damage."

Dr. RALL. Yes.

Mr. LENT. Has that been established?

Dr. RALL. I thought I said before that there have been repeated medical studies, increased incidences of miscarriages and other similar reproductive outcomes in residents of the Love Canal and increased incidents of low birth weight babies in the residents of Love Canal. These two studies, amongst others, are clear cut and a clear indication of damage which we presume is chemical because of their location.

What I am saying is that there is medical evidence above and beyond the studies that surfaced last weekend which I feel are an adequate reason, along with the chemical exposure data, to justify on a purely scientific and medical basis the evacuation of those 700-odd families.

Mr. LENT. But the two that were trotted out, the two medical studies that were trotted out as the sine qua non for the evacuation, were Dr. Barron's study, which only came out in the past day or so, which we have now heard from Dr. Barron was not statistically significant and that he is not prepared today to say that there are significant health problems, and the second test or study that was trotted out was the so-called Biogenics study, which you in your cover letter to the Secretary of HEW indicate, "Does not provide definitive evidence for judging whether or not there has been demonstrated health damage to the people at Love Canal."

Are there some other studies I am not aware of?

Dr. RALL. Mr. Congressman, I told you these other studies.

Mr. LENT. Who made them up? What were the names of them? Are they doctors?

Mr. GORE. Would the gentleman yield?

Mr. LENT. Is it Dr. Paigen's study?

Dr. RALL. No, it is the New York State Health Department study primarily.

Mr. LENT. We had a witness here just a few months ago, Dr. Paigen, who testified about Love Canal—that it was a terrible thing. We had a health commissioner of New York State follow her on the witness stand. He completely shot down that study and said that was not valid at all.

We have all these studies floating around, all of them subject to scrutiny and questioning. I am trying to find out——

Dr. RALL. At Congressman LaFalce's request—and sometimes, although he does not think so, I think I am working for Congressman LaFalce.

Mr. LAFALCE. As long as I don't have to pay you.

Dr. RALL. He asked for us to review and compare Beverly Paigen's study and the New York State Department of Health study. We did that very carefully. We concluded after careful review of the New York State data and Dr. Paigen's data, that the two studies that I referred—the increased miscarriages and abortions and the increased incidents of low birth weight babies—were adequate studies and showed that in the residents of Love Canal there were adverse medical effects.

Mr. LAFALCE. Mr. Chairman, at my request I ask that the study that Dr. Rall made reconciling the difficulties between Dr. Paigen and the New York State Health Department be included in this record.

Mr. ECKHARDT. Without objection, it will be admitted at this time.

[The material referred to follows:]

Report of Meetings Between Scientists from HEW and EPA with Dr. Beverly Paigen and New York State Department of Health Scientists

At the request of Congressman LaFalce, a group of HEW and EPA scientists reviewed data from Dr. Paigen and from the New York State Department of Health regarding the medical conditions of residents living around the Love Canal in Niagara Falls, New York, particularly those living in "wet" houses. They met with Dr. Paigen on April 12, 1979, and with representatives of the New York State Department of Health on April 26, 1979. This report represents the consensus of that group.

In summary we believe that the data on miscarriages among residents at the Love Canal areas as well as data on birth weights have identified adverse health effects as a consequence of exposure to a chemically contaminated environment. Because these effects on human reproduction indicate a health hazard, prudent public health practice dictates that such exposure be minimized to the extent feasible. A mechanism to follow the long-term health status of the residents is needed.

The data Dr. Paigen presented were collected without the assistance of a staff but were obtained indirectly from information collected by telephone interviews of residents. These data therefore may not be complete and may contain potential biases. Data obtained by New York State scientists are the product of present day state-of-the-art methodology. Nevertheless, the concerns and questions raised by Dr. Paigen are important.

Although the New York State Health Department has reported an excess of miscarriages in residents near Love Canal, we noted that the extent of this excess may have been understated. This is because control rates used by the New York State scientists to compare the miscarriage data from Love Canal area residents may not be appropriate because of demographic differences in that group (Montreal population) and because some of the miscarriages were self-diagnosed and not reported to doctors. The State counted only miscarriages that could be confirmed by physicians. However, we agree that techniques available for the study of spontaneous abortion rates and birth weight of infants are likely to be the most sensitive indices of potential adverse health effects due to exposure to chemicals because these effects occur with little time lag and are easily measurable. These studies should be continued.

Dr. Paigen is also concerned about incomplete investigations of incidence of birth defects and various chronic diseases, especially epilepsy and asthma, among residents of the Love Canal areas. Studies are being designed by the New York State Department of Health to determine if there is any increase in the prevalence of these disorders.

Dr. Paigen raises the question about moving additional families from the Love Canal area, particularly from "wet" areas thought by

Dr. Paigen to contain people with health effects due to chemical exposures. Preliminary data from the State suggest these wet areas, although located along swales and the pond area, may not be contaminated as a result of surface water flow but rather as a result of use of contaminated Love Canal material as "fill" and a continuing underground transport of chemicals due to water seepage.

From the health studies available for our review, particularly the spontaneous abortion data, w concur that residents of the Love Canal area do have damage to their health as a consequence of exposure to a chemically contaminated environment. These data also suggest a gradient of health effects, the most severe occurring in residents of houses immediately adjacent to the Canal. However, the health effects data, including spontaneous abortion rate data, are not likely to have sufficient statistical precision to serve as the sole criterion for defining which houses should be evacuated. This is because the population of the Love Canal area is small so that only very large differences in incidence or prevalence would be discernible. Absence of a suitable control population adds to the problem and every effort should be made to find and utilize a suitable control population.

Dr. Paigen has suggested that all women of childbearing age who wish more children should be evacuated. Because of the demonstrated effects of the chemically contaminated environment on human reproduction, prudent public health practice dictates that such exposure be minimized to the extent feasible.

Results of geochemical mapping of soil contamination should serve to identify those areas contaminated by chemicals. These results should be helpful in determining where dwellings should be prohibited.

Decisions regarding the potential adverse health effects in people from the Griffin Manor area should be based primarily on geochemical findings and not observed health effects since the population living there may be too mobile for such health effect studies to be feasible.

There is need for better communication of results of the New York State scientists' findings with the residents of the area. Consideration should be given to having one or more residents on any panels or expert committees the State may convene.

Since the scientists doing the studies are State employees, the State appears to have a problem in terms of perceived conflict of interest. However, the New York State scientists are highly competent and are held in high esteem by their peers so that from a scientific point of view little would be gained by having the studies done by others. The involvement of outside scientists both in the interpretation of data and the formulation of recommendations to the State policy makers, which was begun through the convening of the Blue Ribbon Committee of outside experts, should be continued. In a matter such as this where there is much public concern, it is wise that consideration of findings and of alternatives

be conducted openly. To this end it might well be wise to include representatives of the local population.

Concerns regarding remedial construction are not within the expertise of this group but are being studied by EPA. Questions of liability and qualification as a disaster area are also outside the purview of this group.

Because of the diffuse nature of health delivery available to residents of the area, individuals are given variable and sometimes conflicting information, particularly in comparison with their neighbors. The development of some mechanism for providing a consistent level of continuing health care and information regarding ongoing studies is recommended. Further, a mechanism for long-term followup is needed.

Dr. Paigen is to be commended for her humanitarian interests and her willingness to devote her expertise to this problem. Certainly there is much we need to learn about the study and evaluation of problems of this type. In contrast to the epidemiology of infectious disease, clinical chemical toxicology and epidemiology are relatively new sciences. The experience gained from this unhappy episode should better equip us to handle future problems.

Committee members:

Dr. David P. Rall (Chairman), Director, National Institute of Environmental Health Sciences (NIEHS)

Dr. Robert S. Gordon, Jr., Special Assistant to the Director, National Institutes of Health (NIH)

Dr. Robert A. Goyer, Deputy Director, NIEHS

Dr. Walter Rogan, Medical Officer, Biometry Branch, NIEHS

Dr. Carl A. Keller, Chief, Epidemiology Branch, National Institute of Child Health and Human Development (NICHD)

Dr. Philip J. Landrigan, Chief, Special Studies Branch, Chronic Diseases Division, Center for Disease Control (CDC)

Ms. Kathleen Conway, Health Effects Division, U.S. Environmental Protection Agency (EPA)

Dr. Shelly Williamson, Epidemiologist, Health Effects Division, EPA

Mr. ECKHARDT. I believe the time of the gentleman has expired.
Mr. LENT. Mr. Chairman, I wonder if I could just——
Mr. ECKHARDT. We have to pass around here.
Mr. Gore?
Mr. GORE. Thank you, Mr. Chairman.

One of the difficulties with the scientific method, for all its strengths, is that it focuses the attention of people on abstractions rather than on human beings who are really affected by this tragedy. I have said from the very beginning of this hearing that all this stuff about the scientific methodology in the study is really a side issue.

If some are now saying that it did not have as much weight as it earlier appeared to have, it still had some weight. Even if it only had the weight of a straw, it was the straw that broke the bureaucratic camel's back and led to a result that should have been reached a long time ago. It was piled on top of a lot of other health evidence, some of which has been presented to this subcommittee for the past several years. It is in the record. This is the 15th hearing.

Dr. Paigen was referred to, and the witness that succeeded Dr. Paigen at the witness table that day did not fully refute her studies at all. In fact, that witness agreed with substantial portions of her study.

You know, there are a lot of other ways to get evidence, too. You mentioned temporary relocations. There have been some temporary relocations in this area. Every time people leave the area their health improves. When they go back their health deteriorates again. I am not a scientist, but that also is evidence that should have some weight.

Dr Rall, when you reviewed, at John LaFalce's request, the difference between the New York State study and the study by Dr. Paigen, you produced the following findings. I want to quote from them.

No. 3—and I am going to skip the first two——
Dr. RALL. May I have a copy of the study?
Mr. GORE. "Every effort should be made to find and utilize a suitable control population or to assess precisely the health effects on the population."

That was not done, was it?
Dr. RALL. I found it very hard to tell whether it was being done. When we talked to the State Department of Health, they assured us it was being done but I was not able to independently verify that myself.
Mr. GORE. This recommendation was made by you in May 1979, a year ago. Now in the year that has passed since your recommendation of finding a control group and coming up with the kind of health study that we need to determine once and for all the facts of the matter, nothing has been done.

Mr. Davis, I have the record of—this is called the data base for Love Canal, "Love Canal Data Base." This is a memorandum dated May 19, 1980, in the EPA. It lists all of the data collected at the Love Canal area by EPA. There was a blood, breath, and drinking water data survey in September of 1978. That is the last health study by EPA, isn't it, up until this thing that we just heard about today?

[The memorandum referred to follows:]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

May 19, 1980

OFFICE OF ENFORCEMENT

MEMORANDUM

SUBJECT: Love Canal Database

TO: Douglas MacMillan, Acting Director
Hazardous Waste Enforcement Task Force

FROM: Chuck Morgan, Technical Coordiantor
Hazardous Waste Enforcement Task Force

The following is a list of the Love Canal data collected as part of the EPA investigation of the Hooker Chemicals and Plastics Corporation investigation:

* EPA Data

** Stream water survey, September 1978 - Organic chemicals reported to have been disposed of at Love Canal were found in the sediments of Black Creek, Bergholtz Creek, Cayuga Creek, Little River and the Niagara River. This was an indicator of migration of wastes from the Canal.

** Storm sewer survey, August, 1978 - Organic chemicals reported to have been disposed of at Love Canal were found in the sediments and water of the storm sewers draining the Love Canal area. This was an indicator of migration of wastes from the Canal.

** Ambient and basement air study, September, 1978 - Volatile organic chemicals (i.e., chemicals which have a tendency to emit fumes) disposed of at Love Canal were found in the ambient air around Love Canal homes as well as in basements of homes. The incremental or additional cancer risk was calculated as 1 in 100 to 1 in 1000 for some of the homes tested.

** Blood, breath, and drinking water data, September, 1978 - Ten blood and breath samples showed moderate part per billion level contamination. Drinking water samples taken from ten spigots of Love Canal homes showed moderate part per billion contamination.

** Leachate collection system data (southern zone), June, 1979 - Analysis of the leachate from the leachate collection system, installed as the EPA Demonstration Grant showed high part per billion contamination of organic chemicals reported to have been disposed of in the Canal.

** French drain data around 99th Street School, June, 1979 - Analysis of the French drain leachate revealed moderate part per billion contamination of organic chemicals reported to have been disposed of in Love Canal.

** Surface water and home sump samples in the northern zone, June, 1979 - Analyses revealed moderate to high part per billion contamination of organic chemicals reported to have been disposed at Love Canal in a standpipe in a front yard of a home and in the sump pumps of homes in the northern sector.

** Ambient and basement air data, November, 1979 - Two homes were sampled in their backyards and basements to detect continuing contamination. Both homes detected light to moderate contamination of a number of chemicals, particularly Benzene. A risk assessment indicated that a 1 in 10,000 additional risk of cancer still existed as a result of exposure to those levels.

** Blood analyses, January, 1980 - A study for chromosome aberrations and chemical concentrations of 36 blood samples taken from 36 Love Canal residents indicated rare chromosome aberrations and light to moderate contamination in the blood, associated with organic chemicals reported to have been disposed of at Love Canal.

State Data

** Epidemiological data, New York State Department of Health - Indicated that the Love Canal population had suffered a 1.5 times increase in miscarriages over the normal rate. Birth defects and low birth weights in infants were also noted.

** Environmental data, New York State Department of Environmental Conservation (1977-1978) - Soil, surface water, sump, and air data indicated approximately 82 different chemical compounds at the landfill of which one is a known human carcinogen and 11 are known or suspected animal carcinogens.

Outside Data

** Paigen study, March, 1979 - Health hazards experienced by people still living in the vicinity of Love Canal suggests toxic chemicals are presently migrating through the soil along the paths of old streambeds that once criss-crossed the neighborhood. Families in homes bordering these old streambeds show an increase in several health problems including miscarriages, birth defects, nervous breakdowns, asthma and diseases of the urinary system.

** Barron study, 1980 - Suggestive data of impaired peripheral nerve damage and indicates parameters to use as endpoints in a better controlled study.

Dr. GAGE. That is right, Mr. Gore.

Mr. GORE. We have heard a lot of talk——

Mr. MILLER. I believe in fact there was another blood and breath study in 1979.

Mr. GORE. Listed here in this data base—I will stand corrected. You have ambient air data, basement data——

Mr. MILLER. Yes; I am sorry, ambient air data was in 1979.

Mr. GORE. No health study from September 1978 until the Biogenics study. If OMB cuts out your money, I can sympathize to some extent. It just seems to me all this talk about the great followup study is still contingent upon OMB reversing direction and allowing the money to be spent to tell these people what the nature of their problem is.

Mr. DAVIS. Mr. Gore, I am not familiar with all the history of this, but Dr. Rall was just commenting on a study or work that was supposedly being continued by the State of New York, not by EPA. I would only point out that my information from the Department of Justice people is that we had great difficulty finding out ourselves what the State was doing in that case and finally had to subpena the data from them.

Mr. GORE. One of the things this illustrates for me is that we have a State government and Federal agencies trying for this long to come up with evidence showing the causal link, which to a lay person seems to be clearly there. I have been there. I have been there and visited the site and talked with the people. I have seen their children. I have seen the evidence of their health problems. They are real. There is no question about that really.

As you said, this subcategory of science is in its infancy, Dr. Rall, but what does this say about the difficulties faced by a private individual who does not have money to hire a lawyer in the first place and has to go get some lawyer to take the case on a contingent fee basis? What does it say about the difficulties posed by that person living at Love Canal when that person wants to go into the courts of this country seeking justice for the damage that was done to his or her children?

The difficulties are virtually insurmountable, are they not?

Dr. RALL. I would certainly agree.

Mr. GORE. The argument that that leads to is in support of establishing a Federal cause of action that people can use when they go into the court to sue for damages against the companies that have created this problem. Again, I offered that amendment in the committee. I will again on the floor.

I want to dwell very briefly on this hassle over the Biogenics survey. Again, I really do think this is a side issue, but I will say this just to set the record straight.

One of the review panelists, Dr. Rall, had a personality conflict with the fellow who authored this study; is that correct?

Dr. RALL. That was the first I heard of it today.

Mr. GORE. Today was the first you heard of it?

Dr. RALL. That he had a personality conflict.

Mr. GORE. I hate to get into this, but I really think the record ought to be complete on this matter.

As I understand what happened, there was a history of personal animosity between the guy who did the study and one of the

members on the review panel. He found out that this guy was on the review panel and he just hit the roof. In fact, I am told that the night before there was a telephone conversation between the two of them and the blood started to boil. This is what caused the mixup, the unfortunate incidents, the following day.

You did not hear about that until today; is that right, Dr. Rall?

Dr. RALL. We were told he had a conflict of interest. He owned or was about to own a private consulting firm which might go into competitive business. This seemed a little farfetched to me.

We did later find out that this individual does have a small private consulting firm that does no cytogenetics and has nothing to do with going into this sort of business.

Mr. GORE. But they had had a personal relationship that had left some scars. You had not heard that until today?

Dr. RALL. I heard it first today.

Mr. GORE. If this sounds petty to put in the record, the only reason I do so is because this issue has come up. Some of the newspapers have looked at it. Again, the main issue is that these people have suffered a tremendous health damage of a very complicated nature, of a nature that our society is not used to dealing with. We are learning how to deal with it. Unlike other countries, we have allowed the irresponsible disposal of incredibly large volumes of very toxic chemical wastes, 100 billion pounds a year. A hundred billion pounds a year are still being disposed of in thousands of these sites around the country. People are exposed to the damages.

What the real issue is is how we deal with that problem. This is one segment of that larger issue. Specifically, this segment is how should we conduct a health study on the populations affected by exposure to these substances, how should the Government react when this kind of health damage occurs, who should be responsible, and how should the effort be organized?

We can learn from this episode ways to perform those functions better. I hope that the record of this hearing is useful in that regard.

Thank you, Mr. Chairman.

Mr. LaFalce?

Mr. LAFALCE. Thank you, Mr. Chairman.

Dr. Rall, you said that at times you think you are working for me. Let me assure you that, were you working for me, you would be working an awful lot harder than you have thus far on the problems of the Love Canal.

I had the pleasure of having dinner last night with one Joseph Califano. I said, "You know, Joe, remember that study that I demanded? I still haven't gotten it, and it is well over a year and a half."

I am pleased that today, Dr. Rall, we finally do have it. You are making it public today; correct?

Dr. RALL. Yes.

Mr. LAFALCE. Do you remember the first time we met?

Dr. RALL. Just before Christmas a couple years ago.

Mr. LAFALCE. It was even earlier than that. You were here in Washington, D.C., in 1978, in the fall of 1978. You were with Dr.

Axelrod, the commissioner of the New York State Department of Health. I brought you together in my office.

I said to Dr. Axelrod, "Ask him to help you." He said, "Want to help me?" You said, "Yes."

What has been the role of the National Institute of Environmental Health Sciences with respect to the Love Canal from that time to the present? What has been the working relationship of NIEHS with the New York State Health Department from that time to the present?

So often you have said that you thought that the New York State Health Department was doing what they should be doing, but now we know they weren't. You didn't know. What is the story?

Dr. RALL. I think there is a little confusion about what NIEHS could offer.

Mr. LAFALCE. There is a lot of confusion about that and a lot of confusion about what each agency within HEW or HHS could offer or EPA, and that still has not been clarified. I said there was a lot of confusion in the fall of 1978. I said let's clarify it and let's define it, and it still has not been done.

Dr. RALL. In terms of going into the area and looking at the patients, at that time and until very recently we had one and a half epidemiologists, which are the sorts of people who have to do it. One of them was almost fully involved in a study which is, I think, of great importance. That is PCB in mothers' milk and its effect on the baby.

We support research in that way primarily by grants. I asked the New York State Department of Health over and over again to apply for a grant that we can give. That is the easiest and quickest way we can transfer money. I never got a request.

Mr. LAFALCE. Would you repeat that, please?

Dr. RALL. The easiest and quickest way we can transfer money to support research is by grant requests. I asked the New York State Department of Health for grant applications, and I never got any.

Mr. LAFALCE. Did you tell them what in your judgment were the types of tests that should be conducted at the Love Canal site from the time of that day in my office to the present? They would have known what type of applications to submit.

Dr. RALL. Probably not. I probably assumed that they would submit what they thought was most interesting and most important. As you and I know, they have a good reputation.

Mr. LAFALCE. But the point is that, although this is probably the environmental catastrophe of the ages, it is also the greatest opportunity we have had to advance the knowledge of science with respect to human exposure to toxic substances. It would seem to me that it is the highest responsibility of the Federal Government to seize such an opportunity for the purpose of learning. It seems to me that the Federal Government has failed to seize that opportunity.

Dr. RALL. I would not disagree.

Mr. LAFALCE. Did you ever hear of putting out proposals to bid, suggesting that a certain type of study should be done, and then asking, "All right, now who will submit a proposal to do this type of study?" Is this common within the profession?

Dr. RALL. It is, indeed. It takes much longer than the grant processes, which is why we did not go that way.

Mr. LAFALCE. You would not do it unless you were confronted with an unusual situation; is that correct?

Dr. RALL. No. It takes much longer. You would end up not being able to get the work done until a considerable period after the grant had been funded.

Mr. LAFALCE. It does take much longer to do nothing than it would have taken to do that; does it not?

Dr. RALL. That is right.

Mr. LAFALCE. We are now on May 22, 1980. I first brought Federal officials into this in the summer of 1977. We still do not have the type of knowledge that we desire. Is that not correct?

Dr. RALL. We do not have as much knowledge as we desire. That is certainly true. I think we have some.

Mr. LAFALCE. We have some, but it is woefully inadequate in comparison to what we need and what we should have had if officials, both at the Federal and State levels, charged with the responsibility had fulfilled that responsibility.

Dr. RALL. I guess I should point out that in the public health service the CDC is charged with the responsibility for toxic chemical crises.

Mr. LAFALCE. Now we are getting to the point, the conflict over who is to do what. How many times did I call CDC and try to bring them into the picture? Maybe we should have CDC at the table so I could get a go at them. All I have received is constant runaround: Call NIEHS. Call NIOSH. Call CDC. Call Public Health Service. Call the Secretary of Health. Call EPA.

I called them all 10 times, 100 times. I tried to get them together. That was the reason that I asked that you gather together a task force, and you did. You were the chairman of that task force. You had CDC on it. You had EPA on it, et cetera, et cetera.

No further questions.

Mr. ECKHARDT. I have a few questions of EPA.

I might say that maybe we have beat the watchdog long enough and we ought to try to find out what ought to be done in the future.

I would like for you to give me your comment on this proposition. Under the bill that was passed through the Interstate and Foreign Commerce Committee there is a variation from all of the other legislation that has been introduced. The Senate provided for a Federal cause of action without affecting the State causes of action, provided for absolute liability and made it retroactive.

The bill I introduced also provided for a Federal cause of action, but did not make it retroactive. It provided that activity after the passage of the bill should result in absolute liability, not the showing of negligence.

Mr. GORE. Would the chairman yield?

Mr. ECKHARDT. Yes; I yield to the gentleman.

Mr. GORE. As the chairman knows, I have a different view of this issue. It centers on the use of the word retroactive. I believe the Federal cause of action should be established for damages that are currently occurring.

Mr. ECKHARDT. I understand the gentleman, but I would like to complete my question.

Mr. GORE. I thank my chairman for yielding.

Mr. ECKHARDT. I understand the gentleman from Tennessee and I disagree as to whether or not that type of relief is appropriate. However, that is not so much the question I am getting at.

The bill that ultimately came through the committee wiped out all questions of third party liability. Whether or not the gentleman from Tennessee is correct and we should follow that course or whether we should follow a more limited course, it would seem to me that the best means of inserting within the law a pressure on the producer of the toxic substance is to provide that the producer of the toxic substance will ultimately be responsible for the damages which accrue. Of course, it is true that under existing State law some State laws have absolute liability, some have negligence liability, and so forth.

The question that I would like to ask you is whether or not you agree there ought to be some kind of liability. That, of course, does exist in the Senate version of the bill—some kind of liability with respect to injury to persons.

I suppose I need not limit this to EPA. There is knowledge concerning policy involved, so any comment is invited at this point.

Mr. DAVIS. I would offer the first response. There are a lot of different versions of the so-called third party liability or cause of action floating around. I think there is also lots of confusion as to what is meant by each version of it.

I would preface my comment by saying that the administration bill, as I am sure you are well aware, did not include any type of Federal cause of action for these kinds of damages. We included liability and recovery of cost, but those things were eligible under our fund, which is primarily cleanup.

Therefore, my comment is not necessarily based upon the administration's bill. It is my own personal opinion. It carries whatever weight that might imply.

I think it would be helpful to have a Federal cause of action created to help citizens in these cases. If you are going to do it, however, you cannot burden it with defenses which might in fact make their job more difficult than it is under existing law. If you are going to have an effective cause of action, you have to maintain the concept of strict liability. When you introduce defenses, whether they be negligence, arguments about prior ownership, or whatever, you effectively have taken away what you were trying to give.

My other comment would be, while I understand there are some philosophical difficulties about applying this concept and the liability to existing sites, the problem we are facing today is primarily from existing sites. To apply that concept to new sites that might occur, new disposals, new discharges or dumps that might be created in the future is to some extent closing the gate after the horses are out.

We have hundreds, if not thousands, of existing sites. That is where the immediate problem is. If other statutes are effective, the future sites will not occur.

Your proposal would, I agree, greatly help the existing statutes, such as RCRA, to prevent new problems from occurring, but it

would not help the problems that already exist, which I suspect are by far the larger percentage of the problem.

Mr. ECKHARDT. There is some problem then—and I think people may disagree on it—as to whether or not you may treat an act which occurred in the past but whose damage occurs after the passage of the act in a different way with respect to the question of liability than would exist under the law at the time the act occurred. I think that would be a subject that might well be looked into as a legal and constitutional position.

If there are comments on that subject or if this committee desires to ask for analysis of the question from the American Law Division of the Library of Congress, I would ask unanimous consent that the record be held open at this time.

We certainly appreciate your comments.

Mr. GORE. Reserving the right to object only for the purpose of expanding the unanimous consent request.

I would also ask unanimous consent to insert in the record at this point an analysis of the cases which have already interpreted the constitutional point in question.

Mr. ECKHARDT. I certainly intended to include any position on this from any source.

Does the gentleman persist in his objection?

Mr. GORE. I withdraw my objection and persist in my additional request.

Mr. ECKHARDT. Without objection, it will be granted.

[Not available at time of printing.]

Mr. ECKHARDT. Mr. Moffett?

Mr. MOFFETT. Mr. Chairman, I might interject here something which I think addresses your question as well as Mr. Gore's concern.

I am citing from a staff paper developed in the Department of Justice. I will cite one or two sentences from it. On the question of retroactivity I will read a few sentences.

> It is quite common for laws to be passed declaring an existing condition, structure, or activity to be a public nuisance. These declarations most usually will be intended and designed to protect the claimant who is protected under the common law of nuisance. The declaring of an existing condition, say the continuing contamination of a stream from abandoned mines or the existence of structures prone to rapid consumption by fire, to be a public nuisance is viewed as neither retroactive statute nor one depriving an owner of property without due process of law.

Mr. ECKHARDT. Let me ask you this question: I do not think anybody is questioning the provision with respect to cleanup when a site continues to be a nuisance or create damage. As a matter of fact, in the law that we passed out of our committee I think we did not do nearly as much as we could do because we provided for defenses which would take into account the existence of no negligence and a reasonable degree of care with respect to contracting with responsible parties for disposing of waste.

On that subject, we certainly did not go nearly as far as we could have gone both retroactively and prospectively. I would think we would all agree on that.

Would you not agree on that?

Mr. DAVIS. I would agree completely. The defenses to liability compound the problem Mr. Gore has referred to in funding. Our ability to clean up the sites is limited by funds. It is compounded

by the fact that defenses to liability take away the incentive for industry to clean up the site themselves.

Our projection in the administration bill of what it would take to solve this problem relied heavily on the concept of strict liability being an incentive and inducement to industry to clean up many of the sites themselves. We cannot clean it up ourselves even with triple the funds in your current bill.

Mr. ECKHARDT. Under the administration's proposal with respect to cleanup, as I understood, you call for strict liability both retroactively and prospectively. Is that not correct?

Mr. DAVIS. Yes; that is correct.

Mr. ECKHARDT. I think we all agree on that proposition. However, the majority of the Committee on Interstate and Foreign Commerce did not. The provisions, I think, are contained, however, in the Senate bill. Am I correct in that?

Mr. DAVIS. That is my understanding, although it is hard to tell at this point. They are, in fact, in markup this morning. Hopefully, we will know more this afternoon.

I would only comment, Mr. Chairman, that if we say we should apply strict liability to cleanup costs, things that are expended from the fund, for example, in the recovery of those costs, why would we make the distinction and apply a different standard to compensation for damages?

Mr. ECKHARDT. I find a difference, but I think we would be arguing here for some time if we tried to ventilate this.

Mr. GORE. Mr. Chairman, I would like briefly to speak on this point.

I know it sounds like a very arcane legal argument. Part of the reason it is so complicated is because we are really talking about two different sets of cases. In one instance we are talking about actions by private citizens for damages against chemical companies. In the other set of cases we are talking about actions by the Federal Government to force cleanup.

What the Interstate and Foreign Commerce Committee bill did was it deleted a new cause of action for private citizens to sue for damages, in spite of the fact that, as this record today illustrates vividly, it is virtually impossible in many jurisdictions to establish the causal link that will be required as proof. The House Commerce Committee voted not to create that Federal cause of action.

Now we did create a Federal cause of action for the Federal Government to go into Federal court and sue to force cleanup, but in that instance the House Commerce Committee bill gives the companies a new defense to use to defend themselves in such a lawsuit. Specifically, it allows a company to plea that if some third party entered the picture and took action that contributed substantially to the damage that was done, they can say, "That absolves us under certain circumstances and this is the defense we are going to use against the Federal Government."

I have had members of my staff research the possible effects of that law, of that new defense, not only on future litigation, but on the pending litigation in Love Canal. It is not inconceivable that it would be given to the judge as an additional argument to defend against the current suit by the Federal Government.

Mr. ECKHARDT. Would the gentleman yield back to me?

Mr. GORE. Yes; I would be glad to do so.

Mr. ECKHARDT. The gentleman is absolutely correct. I do not disagree with him in any way.

Certainly we should make it clear if we only do what the House bill did—and I think we should do much more—that the provisions with respect to the defenses would be only prospective and they would not lessen liability which may previously have existed.

Mr. GORE. I would like to speak on that point.

Again, the problem of retroactivity is one which puzzles me to some extent. The lawsuit by the Federal Government against Hooker Chemical Co. is a lawsuit for damages that are currently being done to the environment as a result of actions which took place in the past. To that extent, the new defense in the Commerce Committee bill would have an effect on lawsuits for what the chairman refers to as retroactive dumping.

Mr. ECKHARDT. It may. I really rather doubt it because I do not think it preempts State law. I think the State law may still be enforced under its own terms.

I would only view that as limiting the Federal action. I would doubt that it affected any Federal action before the Federal action were created by the statute. However, I agree that ought to be clarified.

Now can't we let that one go at that?

Mr. GORE. I have a few cases here I wanted to cite, but I guess——

Mr. ECKHARDT. I am trying not to disagree with the gentleman from Tennessee.

Mr. LAFALCE. Would the gentleman yield for 1 minute?

Mr. ECKHARDT. I think the gentleman from Connecticut was asking that I yield.

Mr. LAFALCE. I will not engage in the debate on that issue at this point. It is a delicate legal issue. However, how ironic it would be if that tragedy that gave birth to a law to protect human beings would not, in and of itself, give protection to those individuals who are the victims of the tragedy.

Mr. ECKHARDT. I yield to the gentleman from Connecticut.

Mr. MOFFETT. Thank you, Mr. Chairman.

It is my view that we have had a pretty decent hearing here. We ought to first thank our witnesses because they have certainly shown a great deal of endurance and patience in being here this long. I think they have tried to be forthright.

There are certainly criticisms that can be made, but in terms of your appearance here today I am certainly grateful for it, and I think both subcommittees are.

There are a couple of points I would like to make in summary. At the beginning, as did Mr. Eckhardt, I raised some questions as to what we would like to cover.

I think it is clear that the people of Love Canal who are so concerned about this problem and their representative from that congressional district are correct in their feeling that they have been victimized by some ad hoc policymaking. To a certain extent and for many of the reasons that several of you have articulated here, we are in the infant stages of this and to some extent you are going to get ad hoc policy.

However, I would say I think every member of both subcommittees here wants—and every resident of Love Canal and all those areas in my district, in Texas, in Tennessee, and all the other States that are concerned about this issue want—very much to have an organized, consistent, predictable operation within the Government with regard to these issues. I think all of you at the witness table want that, too.

We cannot tolerate the kind of confusion that we had over the question of the access of the review team to the study. That is just ridiculous. I think we all have to acknowledge it is ridiculous. We ought to have a commitment—and I sense that we have gotten it—that that kind of thing is not going to happen.

In terms of the kind of consistent, organized, predictable policy that all of us say we want, I do not think we can get it under the current political climate, given the fact that not so much the balanced budget is becoming a reality—I am not against that—but that those budgets are being created, developed, and constructed without the thoughtful deliberation that finds a Congress and an administration in power capable of deciding in a dispassionate, scholarly way what is a wise social investment and what is not a wise social investment.

I hope that each of us who are elected officials are prepared to go home and have the courage—and we have talked about courage a lot, courage to vote for balanced budgets, courage to cut Federal spending, and so forth—I hope we have the courage to let people know what the implications are of this kind of phoney balanced budgetmaking that is going on in the Congress right now. That is exactly what it is. It is a charade. It is built on a foundation of mythologies that needs are being met when they are not.

If we ever wanted a perfect illustration of that, all we have to do is take home the testimony of almost everyone at this table today as to what the implications are of the OMB action, the implications of the kind of statement brought out by Mr. Gore by OMB, the implications of further neglect, and I think several of you have implied it and some of you have said. What we are doing now is, even if people do not want to look at it in a compassionate way, we are going to pay more later. It is very likely we will pay more later for the neglect that we have had today.

By the way, as I hope you know, it is not only the balanced budget which is sort of ironic in view of the very important human needs here, but it is things like the Energy Mobilization Board which is about to become law and which will insure that future hazardous waste regulations can be temporarily suspended without the Congress doing anything.

You folks may come up with important regulations to protect the public health and find some energy project that is on the so-called fast track speeding along and wiping those regulations right out.

I think all of us on both of these subcommittees have a challenge to face up to what the needs are. Those of us who have preached balanced budgets the most, and some of our colleagues here today who have been the most aggressive in saying we need balanced budgets have walked in here today and said, "Oh, we are going to have to spend a great deal of money on this problem."—I hope we have the courage to face up to that.

I hope each of you has the courage to speak out. If we do not have the whistleblowers, the conscientious public servants within the Federal agencies, to tell us and the public what the true need is, then we are going to be deprived of a very important resource.

Chairman Eckhardt, it has been a great pleasure for our subcommittee to join with yours in this hearing. I am sure we will continue to pursue this issue.

Mr. ECKHARDT. There is one thing I would like to clarify and find out how you feel about it. That is on this question of liability.

The defenses are "An act or omission of a third party if the defendant establishes that he exercised due care with respect to the hazardous waste concern, taking into consideration the characteristics of such hazardous waste."

Now that troubles me a great deal. It seems to me that at least prospectively, and possibly—I would not say possibly retroactively but in deference to Mr. Gore that would be an argument—certainly prospectively and perhaps in the past with respect to cleaning up waste the standard could be absolute liability. However, the question with respect to damages in the future seems to me to be somewhat another question.

At any rate, it seems to me that at least prospectively in both cases the liability should continue on the generator of the hazardous waste. That liability should be absolute until the hazardous waste ceases to exist.

Otherwise, it seems to me we will run into defenses like we are going to be confronted with in the Hooker case—that they used the best technology available at the time, that they dumped in the Love Canal, that they covered it over, that they were careful in doing so, that they conveyed the Love Canal area under a contract that they no longer accepted responsibility but turned it over to the school district, and so forth.

It seems to me as long as those defenses are available, certainly with respect to generation of hazardous waste today, there is going to be no assurance that the cost of disposing of the waste carefully and competently will be passed to the product. The only person who can pass it to the product is the producer of the waste.

I have seen too many cases—we saw them in Texas in our hearings—where a responsible chemical company dealt with perhaps a slightly less responsible large disposal company. Then that disposal company maybe sold certain No. 6 fuel oil laced with benzene, nitrobenzene, to a trucker that might have delivered that somewhere in Louisiana. On down the line you have a lesser and lesser degree of responsibility.

I do not see how we are going to meet that question with the defenses that are provided in the House bill. I would be glad to have your comments on that.

Mr. DAVIS. I could not agree more, Mr. Chairman. I would possibly amplify that there are some other ways in which the bill can become ineffective unless the proper history and drafting has been done.

For example, not to deny the need for the type of medical studies talked about today to help in the overall process of ranking cases or ranking sites, we cannot be put in the situation where in order to say that a company is liable we have to show that the damages

occurred. We are not cleaning up sites necessarily because damage has already occurred. We are cleaning up sites because of the threat of damage occurring in the future exists. We are not going to have to wait until it is too late and the damage has already occurred before we can take action. That kind of guidance is just as important as the point you made, which also is critical.

Mr. ECKHARDT. I agree on that.

This has been a most helpful hearing. We very much appreciate your participation here and your concern about the question with which we are also concerned.

The hearing is adjourned.

[Whereupon, at 1:44 p.m., the subcommittees adjourned.]

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